South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

A G E N D A

MEETING, MARCH 3, 2017

A meeting of the South Coast Air Quality Management District Board will be held at 9:00 a.m., in the Auditorium at SCAQMD Headquarters, 21865 Copley Drive, Diamond Bar, 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 SCAQMD 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.

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) or contact the Clerk of the Board, (909) 396-2500. Copies of revised agendas will also be available at the Board meeting.

CALL TO ORDER

- Pledge of Allegiance
- Opening Comments: William A. Burke, Ed.D., Chair
  Other Board Members
  Wayne Nastri, Executive Officer

Staff/Phone (909) 396-

CONSENT CALENDAR (Items 1 through 23)

Note: Consent Calendar items held for discussion will be moved to Item No. 24

1. Approve Minutes of February 3, 2017 Board Meeting **Garzaro/2500**

Budget/Fiscal Impact

2. Execute Contracts with Consultants to Provide AB 2588 Assistance **Nakamura/3105**

At its November 4, 2016 meeting, the Board approved the release of an RFP for AB 2588 Consultant Assistance to provide support to staff in the review of AB 2588 and Rule 1402 reports over the next four years. Eight proposals were received and scored considering both technical merit and costs. This action is to award contracts to six of the eight firms who responded to the RFP. Funds for this project, in an amount not to exceed a total of $500,000, will be allocated from the Air Toxics Special Revenue Fund (15) over an initial two year period. Following the initial two year period, the Executive Officer will have the option to extend each contract once per year for the next two years, and increase the total amount allocated up to another $250,000 per year, for a total cost up to $1,000,000 spread between all six firms over the full four year period of these contracts. The Air Toxics Special Revenue Fund is specifically designed to provide funds to manage the AB2588 program from fees paid by AB2588 facilities. (Reviewed: Administrative Committee, February 10, 2017; Recommended for Approval)

3. Approve Year-Round Electric Lawn Mower Rebate Program and Authorize Rebate Payments **Minassian/2641**

For the past 14 years, the SCAQMD has implemented an Electric Lawn Mower Exchange Program. Over the last two years, the Program has experienced declining exchanges, likely due to the severe drought across California and market saturation. Staff proposes to modify the Program by offering a year-round Electric Lawn Mower Rebate Program on a first-come, first-served basis, where participants would receive a rebate through an online application process after purchasing a new battery-electric lawn mower and scrapping their old gasoline-powered lawn mower at a participating licensed dismantler. This action is to approve the year-round Electric Lawn Mower Rebate Program on a first-come, first-served basis and authorize the Executive Officer to issue rebates to program participants in a total amount not to exceed $250,000 from the Rule 2202 Air Quality Investment Fund (27). (Reviewed: Mobile Source Committee, February 17, 2017; Recommended for Approval)

4. Execute Contract to Develop and Demonstrate Electric School Buses with Vehicle-to-Grid Capability **Miyasato/3249**

DOE recently awarded the Blue Bird Body Company, Inc. $4,902,237 for the development and demonstration of electric school buses with vehicle-to-grid (V2G) capability. Blue Bird Body Company proposes to develop and manufacture V2G electric school buses and demonstrate them in the Rialto Unified School District. Staff proposes to cost-share this project. This action is to execute a contract with Blue Bird Body Company for the development, manufacture and demonstration of electric school buses in an amount not to exceed $1,900,000 from the Lower-Emission School Bus Fund (33). (Reviewed: Technology Committee, February 17, 2017; Recommended for Approval)

5. Execute Contract to Develop and Demonstrate Medium-Heavy Duty (Class 5-7) Plug-in Hybrid Electric Vehicles for Work Truck Applications **Miyasato/3249**

DOE recently awarded $2,932,193 to Odyne Systems, LLC, for the development and demonstration of a medium-heavy duty (Class 5-7) plug-in hybrid electric vehicle (PHEV) for work truck applications. Odyne proposes to develop and demonstrate medium-heavy duty (Class 5-7) PHEV work trucks with reduced fuel consumption and fully electrified jobsite functions. Staff proposes to cost-share this project. This action is to execute a contract with Odyne Systems, LLC, for the design, manufacture and demonstration of medium-heavy duty (Class 5-7) PHEV work trucks in an amount not to exceed $900,000 from the Clean Fuel Fund (31). (Reviewed: Technology Committee, February 17, 2017; Recommended for Approval)

6. Transfer Funds, Execute Contract to Develop and Demonstrate Vessel Performance Management Software and Equipment, and Amend Award **Miyasato/3249**

The California State University Maritime Academy proposes to demonstrate a technology capable of harvesting high altitude wind energy while employing a vessel performance optimization system. The first two phases of the project includes the design and installation of the performance management software and equipment followed by demonstration of the equipment with performance evaluation of its fuel and emissions reductions capabilities. Staff proposes to cost-share phase 2 of this project with the California State University Maritime Academy, Maritime Administration and Bay Area AQMD. These actions are to transfer $50,086 from the BP ARCO Settlement Projects Fund (46) into the Clean Fuels Fund (31), and execute a contract with the California State University Maritime Academy for the design and demonstration of vessel performance management software and equipment in an amount not to exceed $50,086 from the Clean Fuels Fund (31). Finally, this action is to amend a contractor's name from Ricardo Solutions to Ricardo, Inc., for a prior award. (Reviewed: Technology Committee, February 17, 2017; Recommended for Approval)

7. Add Equipment and Add/Delete Positions to Address Operational Needs in Science and Technology Advancement for Metals Monitoring and Analysis **Miyasato/3249**

The elevated levels of hexavalent chromium (Cr6+) that have recently been measured in the City of Paramount have created an urgent need to enhance SCAQMD's air quality monitoring and laboratory analysis capability. This action is to invest in new laboratory and field equipment and better align staffing resources to allow SCAQMD to appropriately address the increasing demand for extensive monitoring of Cr6+ and other toxic metals in the City of Paramount as well as other parts of the Basin. (Reviewed: Stationary Source Committee, February 17, 2017; Recommended for Approval)

8. Create Special Revenue Fund, Recognize and Transfer Funds, Execute Agreement for SCAQMD to Act as Supplemental Environmental Project Implementer for Installation of Air Filtration Systems, Execute Contract and Reimburse General Fund for Administrative Costs **Miyasato/3249**

CARB and the Burlington Northern Santa Fe Railway Company (BNSF) are executing a Supplemental Environmental Project (SEP) agreement to install air filtration systems at school(s) in a local Environmental Justice community. Both parties have requested SCAQMD act as the SEP Implementer. These actions are to: 1) create the Air Filtration Fund (75); 2) recognize up to $625,000 from BNSF into the Air Filtration Fund (75); and 3) transfer up to $625,000 as a temporary loan from the Clean Fuels Fund (31) to the Air Filtration Fund (75). Furthermore, these actions are to execute an agreement with BNSF for SCAQMD to act as the SEP Implementer for this project, execute a contract with IQAir North America for installation of air filtration systems in an amount not to exceed $593,750 and reimburse the General Fund for administrative costs up to $31,250 from the Air Filtration Fund (75). (Reviewed: Technology Committee, February 17, 2017; Recommended for Approval)

9. Execute Contract for Information Technology Review **O'Kelly/2828**

On December 2, 2016, the Board approved release of an RFP for an information technology review. This action is to execute a contract with Sunera LLC to obtain these technology review services. Funds for these services ($75,000) are included in the FY 2016-17 Budget. (Reviewed: Administrative Committee, February 10, 2017; Recommended for Approval)

10. Amend Contracts to Provide Short- and Long-Term Systems Development, Maintenance and Support Services **O'Kelly/2828**

SCAQMD currently has contracts with several companies for short- and long-term systems development, maintenance and support services. These contracts are periodically amended as additional needs are defined. This action is to amend the contracts approved by the Board to add additional funding for needed development and maintenance work. (Reviewed: Administrative Committee, February 10, 2017, Recommended for Approval)

11. Execute Administrative Service Agreement with Los Angeles County Employees Retirement Association to Continue to Administer Healthcare and Death Benefits for SCAQMD Retirees Participating in Los Angeles County Employees Retirement Association **O'Kelly/2828**

Los Angeles County Employees Retirement Association (LACERA) currently administers healthcare and death benefits for 63 retirees and beneficiaries who participated in LACERA while being employed by SCAQMD. LACERA is seeking to execute a new agreement to formalize the administration of these benefits. (Reviewed: Administrative Committee, February 10, 2017; Recommended for Approval)

12. Approve SCAQMD Annual Investment Policy and Delegation of Authority to Appointed Treasurer to Invest SCAQMD Funds **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. (Reviewed: Investment Oversight Committee, February 17, 2017; Recommended for Approval)

13. Annual Meeting of Brain & Lung Tumor and Air Pollution Foundation **Wiese/3460**

This item is to conduct the annual meeting of the Brain & Lung Tumor and Air Pollution Foundation. The Foundation staff will present an annual report detailing the research supported by the Foundation over the past year, the Foundation's plans for the future, a financial report, and a proposal to amend the Articles of Incorporation. (No Committee Review)

14. Approve Contract Awards and Modification, Reallocation of Funds, and Issue Solicitation Approved by MSRC **Pettis/**

As part of their FYs 2014-16 AB 2766 Discretionary Fund Work Program, the MSRC approved a new contract under the Near-Zero Heavy-Duty Natural Gas Engine Incentive Program, and reallocated $4,000,000 from the Enhanced Fleet Modernization Program to the FYs 2016-18 Work Program. The MSRC also approved a modification to a contract under the Local Government Match Program as part of their FY 2011-12 Work Program, a replacement contract under their FYs 2012-14 Work Program, and the release of a Program Announcement for the Major Event Center Transportation Program as part of their FYs 2016-18 Work Program. At this time the MSRC seeks Board approval of the contract awards and modification and to release the solicitation. (Reviewed: Mobile Source Air Pollution Reduction Review Committee, November 17, 2016 and February 16, 2017; Recommended for Approval)

15. Execute Contract for Renewable Natural Gas Commercial Field Test Project and Create Special Revenue Fund **Miyasato/3249**

In conjunction with the Southern California Gas Company (SoCalGas), KORE Infrastructure, Inc., is proposing to conduct research and field tests on their full-scale modular biomethane production process. The proposed research project will utilize a fully integrated system to process biosolids into renewable natural gas, with a goal to optimize consistent operation that yields pipeline-quality gas capable of transmission into the SoCalGas pipeline system. These actions are to create a SoCalGas Settlement Special Revenue Fund and execute a contract with KORE Infrastructure, Inc., in an amount not to exceed $1 million from the SoCalGas Settlement Special Revenue Fund to cost-share the commercial field test project. (No Committee Review)

Items 16 through 23 - Information Only/Receive and File

16. Legislative, Public Affairs and Media Report **Alatorre/3122**

This report highlights the January 2017 outreach activities of Legislative, Public Affairs and Media, which include: Environmental Justice Update, Community Events/Public Meetings, Business Assistance, and Outreach to Business, Federal, State, and Local Government and Media Relations. (No Committee Review)

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

This reports the actions taken by the Hearing Board during the period of January 1 through January 31, 2017. (No Committee Review)

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

This reports the monthly penalties from January 1 through January 31, 2017, and legal actions filed the General Counsel's Office from January 1 through January 31, 2016. An Index of District Rules is attached with the penalty reports. (Reviewed: Stationary Source Committee, February 17, 2017)

19. Lead Agency Projects and Environmental Documents Received by SCAQMD **Nakamura/3105**

This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between January 1, 2017 and January 31, 2017, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA. (Reviewed: Mobile Source Committee, February 17, 2017)

20. Rule and Control Measure Forecast **Fine/2239**

This report highlights SCAQMD rulemaking activities and public workshops potentially scheduled for the year 2017. (No Committee Review)

21. FY 16-17 Contract Activity **O'Kelly/2828**

This report lists the number of contracts let during the first six months of FY 2016-17, the respective dollar amounts, award type, and the authorized contract signatory for SCAQMD. (No Committee Review)

22. Report of RFPs Scheduled for Release in March **O'Kelly/2828**

This report summarizes the RFPs for budgeted services over $75,000 scheduled to be released for advertisement for the month of March. (Reviewed: Administrative Committee, February 10, 2017; Recommended for Approval)

23. Status Report on Major Ongoing and Upcoming Projects for Information Management **O'Kelly/2828**

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 planned projects. (Reviewed: Administrative Committee, February 10, 2017; Recommended for Approval)

24. Items Deferred from Consent Calendar

BOARD CALENDAR

25. Administrative Committee (Receive & File) **Chair: Burke** **Nastri/3131**

26. Investment Oversight Committee (Receive & File) **Acting Chair: Lyou** **O'Kelly/2828**

27. Legislative Committee **Chair: Mitchell** **Alatorre/3122**

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

Agenda Item	Recommendation
AB 1 (Frazier) Transportation Funding	Work with Author
SB 1 (Beall) Transportation Funding	Work with Author
AB 193 (Cervantes) Air Quality Improvement Program: Clean Reused Vehicle Rebate Project	Support
SB 53 (Hueso) Natural Gas Vehicles	Support
Proposed Legislation to Grant Cease and Desist Authority to Air Pollution Control Officer	Work on Concept and and Introduce Bill

28. Special Legislative Committee **Chair: Mitchell** **Alatorre/3122**

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

Agenda Item	**Recommendation**
Proposed Legislation to Enhance An Existing Smog Abatement Fee	Support in Concept
Proposed Legislation to Create a Port Container Cargo Fee	Support in Concept

29. Mobile Source Committee (Receive & File) **Chair: Parker** **Fine/2239**

30. Stationary Source Committee (Receive & File) **Chair: Benoit** **Tisopulos/3123**

31. Technology Committee (Receive & File) **Chair: Buscaino** **Miyasato/3249**

32. Mobile Source Air Pollution Reduction Review Committee (Receive & File) **Board Liaison: Benoit** **Hogo/3184**

33. California Air Resources Board Monthly Report (Receive & File) **Board Rep: Mitchell** **Garzaro/2500**

34. Status Report on Regulation XIII – New Source Review **Tisopulos/3123**

This report presents the federal preliminary determination of equivalency for January 2015 through December 2015. As such, it provides information regarding the status of Regulation XIII – New Source Review in meeting federal NSR requirements and shows that SCAQMD's NSR program is in preliminary compliance with applicable federal requirements from January 2015 through December 2015. (Reviewed: Stationary Source Committee, February 17, 2017)

PUBLIC HEARINGS

35. Adopt 2016 Air Quality Management Plan ***(Continued from the February 3, 2017 Board Meeting for Board Deliberation and Action Only)*** **Fine/2239**

The Air Quality Management Plan (AQMP) is the legally enforceable blueprint for how the SCAQMD air basins will meet and maintain federal and State air quality standards. The 2016 AQMP has been developed in partnership with CARB, U.S. EPA, SCAG, and stakeholders throughout the region, including input from local governments, environmental organizations, academia, and the business community. The 2016 AQMP identifies control measures needed to demonstrate attainment with the federal 2008 8-hour ozone standard by 2031, the 2012 annual PM2.5 standard by 2025, and the 24-hour PM2.5 standard by 2019 in the South Coast Air Basin and the 2008 8-hour ozone standard by 2026 in the Coachella Valley. In addition, the 2016 AQMP provides revisions to previous plans regarding attainment of the 1997 8-hour ozone standard by 2023 and the revoked 1-hour ozone standard by 2022. Further, Appendix I (Health Effects) includes a report on the health impacts of particulate matter air pollution in the South Coast Air Basin. (Reviewed: Mobile Source Committee, January 22, March 18, April 15, May 20, June 17, July 22, September 16 and October 21, 2016, and January 20, 2017)

36. Adopt Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities **Nakamura/3105**

Proposed Rule 1430 will reduce particulate matter and toxic emissions and help to reduce odors from metal grinding and cutting operations at forging facilities. Metal grinding and cutting operations are currently exempt from SCAQMD permits. Based on monitoring, sampling, and site visits, metal grinding at forging facilities can be a significant source of metal particulate emissions, some of which are also toxic air contaminants. The proposed rule will prohibit forging facilities from conducting grinding and cutting operations in the open air and includes requirements to vent metal grinding and cutting operations to emission control devices, to meet a specified emission standard for the emission control devices, conduct metal grinding and cutting operations in a building enclosure to reduce fugitive emissions, and implement a series of housekeeping measures to further minimize fugitive emissions. This action is to adopt the resolution: 1) Certifying the Final Environmental Assessment for Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities; and 2) Adopting Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities. (Reviewed: Stationary Source Committee, January 20, 2017)

37. Approve and Adopt Technology Advancement Office Clean Fuels Program 2016 Annual Report and 2017 Plan Update and Resolution, and Receive and File and Approve and Adopt Revised Membership of Technology Advancement and Clean Fuels Advisory Groups **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 2017 Clean Fuels Program Draft Plan Update was presented to the Technology Committee for review and comment at its October 21, 2016 meeting. This action is to approve and adopt the final Technology Advancement Clean Fuels Program Annual Report for 2016 and 2017 Plan Update as well as the Resolution finding that proposed projects do not duplicate any past or present programs. This action is to also receive and file membership changes to the Technology Advancement Advisory Group and approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group. (Reviewed: Technology Committee, February 17, 2017; Recommended for Approval)

38. Annual RECLAIM Audit Report for 2015 Compliance Year **Tisopulos/3123**

The annual report on the NOx and SOx 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 twenty-second 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 2015 Compliance Year is included in the report. (Reviewed: Stationary Source Committee, February 17, 2017)

OTHER BUSINESS

39. Approve Schedule of Activities to Implement Draft Financial Incentives Funding Action Plan for 2016 AQMP ***(Continued from the February 3, 2017 Board Meeting)*** **Hogo/3184**

A Draft Financial Incentives Funding Action Plan was prepared to help identify new revenue sources that the SCAQMD could pursue for incentive funding programs to help accelerate the turnover of existing vehicles and equipment to zero and near-zero emission technologies and help the region meet federal air quality standards. The Draft Action Plan includes a discussion of potential funding opportunities, public process, and a proposed schedule of activities to be initiated over the next year. The proposed activities include a schedule for staff to work with stakeholders through a public process to identify a set of funding opportunities to pursue, educating the state legislature and Congressional members on the funding needs of the region, and reporting to the Board on progress. This action is to seek the Board's approval on the schedule of activities proposed in the Draft Action Plan and have staff initiate the activities based on the Board's direction. (Reviewed: Mobile Source Committee, July 22 and October 21, 2016; and Governing Board, January 6, 2017)

40. Approve Amendments to SCAQMD Salary Resolution, and Agreements with Executive Officer and General Counsel **O'Kelly/2828**

This item will consider approval of an increase of the Executive Officer's salary. In addition, SCAQMD has established procedures for providing severance to Executive Management staff upon termination. This item seeks approval to modify these procedures to bring them up to date, as well as to provide clarification. (Reviewed: Personnel Committee, February 13, 2017. Less than a quorum was present; the Committee Members concurred that this item be forwarded to the full Board for consideration.)

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**

CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
It is necessary for the Board to recess to closed session 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 actions are:

- In the Matter of SCAQMD v. Browning-Ferris Industries of California, Inc. dba Sunshine Canyon Landfill, Hearing Board Case No. 3448-14;
- Communities for a Better Environment v. SCAQMD, Los Angeles Superior Court Case No. BS153472 (Phillips 66);
- Communities for a Better Environment v. SCAQMD, Los Angeles Superior Court Case No. BS161399 (RECLAIM);
- People of the State of California, ex rel SCAQMD v. Exide Technologies, Inc., Los Angeles Superior Court CaseNo. BC533528;
- In the Matter of SCAQMD v. Exide Technologies, Inc., SCAQMD Hearing Board Case No. 3151-29 (Order for Abatement);
- In re: Exide Technologies, Inc., U.S. Bankruptcy Court, District of Delaware, Case No. 13-11482 (KJC) (Bankruptcy case);
- In the Matter of SCAQMD v. Torrance Refining Company, LLC, SCAQMD Hearing Board Case No. 6060-5 (Order for Abatement);
- 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);

- SCAQMD v. U.S. EPA, D.C. Circuit Court Case No. 15-1115 (RFP for Coachella Ozone Rule);
- SCAQMD v. U.S. EPA, D.C. Circuit Court Case No. 16-1364 (RFP for Coachella PM2.5 Implementation Rule);
- SCAQMD v. Anaplex, Los Angeles Superior Court Case No. BC608322 (Paramount Hexavalent Chromium); and
- In the Matter of SCAQMD v. Aerocraft Heat Treating Co., Inc. and Anaplex Corp., SCAQMD Hearing Board Case No. 6066-1 (Order for Abatement).

PUBLIC EMPLOYEE PERFORMANCE EVALUATION
It is also necessary for the Board to recess to closed session pursuant to Government Code section 54957(b)(1) as specified below:

Title: Executive Officer

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 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

AQ-SPEC = Air Quality Sensor Performance Evaluation Center
AQIP = Air Quality Investment Program
AQMP = Air Quality Management Plan
AVR = Average Vehicle Ridership
BACT = Best Available Control Technology
Cal/EPA = California Environmental Protection Agency
CARB = California Air Resources Board
CEMS = Continuous Emissions Monitoring Systems
CEC = California Energy Commission
CEQA = California Environmental Quality Act
CE-CERT =College of Engineering-Center for Environmental Research and Technology
CNG = Compressed Natural Gas
CO = Carbon Monoxide
CTG = Control Techniques Guideline
DOE = Department of Energy
EV = Electric Vehicle
FY = Fiscal Year
GHG = Greenhouse Gas
HRA = Health Risk Assessment
LEV = Low Emission Vehicle
LNG = Liquefied Natural Gas
MATES = Multiple Air Toxics Exposure Study
MOU = Memorandum of Understanding
MSERCs = Mobile Source Emission Reduction Credits
MSRC = Mobile Source (Air Pollution Reduction) Review Committee
NATTS =National Air Toxics Trends Station
NESHAPS = National Emission Standards for Hazardous Air Pollutants
NGV = Natural Gas Vehicle
NOx = Oxides of Nitrogen
NSPS = New Source Performance Standards
NSR = New Source Review
OEHHA = Office of Environmental Health Hazard Assessment
PAMS = Photochemical Assessment Monitoring Stations
PAR = Proposed Amended Rule
PEV = Plug-In Electric Vehicle
PHEV = Plug-In Hybrid Electric Vehicle
PM10 = Particulate Matter $\leq$ 10 microns
PM2.5 = Particulate Matter $\leq$ 2.5 microns
PR = Proposed Rule
RFP = Request for Proposals
RFQ = Request for Quotations
SCAG = Southern California Association of Governments
SIP = State Implementation Plan
SOx = Oxides of Sulfur
SOON = Surplus Off-Road Opt-In for NOx
SULEV = Super Ultra Low Emission Vehicle
TCM = Transportation Control Measure
ULEV = Ultra Low Emission Vehicle
U.S. EPA = United States Environmental Protection Agency
VOC = Volatile Organic Compound
ZEV = Zero Emission Vehicle

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 1

MINUTES: Governing Board Monthly Meeting

SYNOPSIS: Attached are the Minutes of the February 3, 2017 meeting.

RECOMMENDED ACTION:
Approve Minutes of the February 3, 2017 Board Meeting.

Denise Garzaro,
Clerk of the Boards

DG

FRIDAY, FEBRUARY 3, 2017

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 Pro Tem Ben Benoit, Vice Chairman
Cities of Riverside County

Supervisor Marion Ashley
County of Riverside

Council Member Joe Buscaino
City of Los Angeles

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

Supervisor Sheila Kuehl
County of Los Angeles

Dr. Joseph K. Lyou
Governor's Appointee

Mayor Pro Tem Larry McCallon
Cities of San Bernardino County

Council Member Judith Mitchell
Cities of Los Angeles County – Western Region

Supervisor Shawn Nelson (Arrived at 9:30 a.m.)
County of Orange

Dr. Clark E. Parker, Sr. (Left at 10:30 a.m.)
Senate Rules Committee Appointee

Council Member Dwight Robinson
Cities of Orange County

Supervisor Janice Rutherford
County of San Bernardino

CALL TO ORDER: Chairman Burke called the meeting to order at 9:00 a.m.

- Pledge of Allegiance: Led by Chairman Burke.

- Opening Comments

Dr. Lyou. Reported that he attended the Annual Meeting of the National Academy of Sciences Transportation Research Board in Washington, D.C. on January 9, 2017, where he served on a panel with the topic of the next steps towards zero deaths from traffic. He noted that transportation planners are now recognizing that traffic safety is related to both car accidents and also from the impacts of air pollution on public health. He asked staff to investigate claims made by CARB during a presentation at that conference showing that heavy-duty diesel trucks, although certified to the 2010 standard, were actually emitting up to nine times as much when driving at slow speeds. He noted that he also attended the Ports Clear Air Action Plan Workshop on January 24, 2017 where he had a chance to view a one-of-a-kind ultra-low NOx heavy-duty truck which includes a 12 liter engine and holds the potential to assist greatly in meeting future attainment goals.

Chairman Burke. Announced that he attended the Martin Luther King, Jr. Day of Service Forum in Los Angeles on January 14, 2017, where the keynote speaker was Muhammad Ali's oldest daughter, Maryum Ali, who did an excellent job of relating to the audience. He spoke about his experience attending the memorial services for Supervisor Benoit and expressed appreciation to all of those who attended.

Mayor Pro Tem Benoit. Expressed gratitude to those who have supported him and his family during the time surrounding the loss of his father; and thanked District staff who compiled the video clip that was shown at the January 6 Board Meeting in his honor.

Dr. Parker. Noted that he traveled to Washington, D.C. in January and met with Senator Jim Inhofe, Chairman of the Senate Environment Committee, who expressed an interest in working with the District to address the unique challenges that California faces. He explained that he also spoke with additional legislators who were grateful for the information he shared with them. He added that, unfortunately, he would not be able to stay to participate in the discussion of the AQMP as he needed to travel to a funeral for a family member and acknowledged all of the individuals who were in attendance to speak about the proposed Plan.

- Swearing In of Newly Appointed Board Member Marion Ashley

  Chairman Burke administered the oath of office to Supervisor Marion Ashley, who was appointed by the Riverside County Board of Supervisors, for a term ending January 15, 2018.

CONSENT CALENDAR

1. Approve Minutes of January 6, 2017 Board Meeting

2. Set Public Hearings March 3, 2017 to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations

   Adopt Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

Budget/Fiscal Impact

3. Execute Contracts to Conduct In-Use PM Emission Study for Gasoline Direct Injection Vehicles and Establish Renewable Natural Gas Research Center 

4. Recognize Revenue and Execute Contract for Development of Ultra-Low Emission Diesel Engine for On-Road Heavy-Duty Vehicles

5. Renew SCAQMD's Membership in CaFCP for Calendar Year 2017, Provide Office Space for CaFCP, and Receive and File California Fuel Cell Partnership Executive Board Meeting Agenda and Quarterly Updates 

6. Recognize, Transfer and Appropriate Revenue, Amend and Execute Contracts, and Approve Eligible Participant Vouchers to Continue Implementation of Enhanced Fleet Modernization Program

7. Issue Program Announcement for Ships at Berth and Cargo Handling Equipment Projects Under Proposition 1B-Goods Movement Program 

8. Amend Contract for Consultant Services for SCAQMD Environmental Justice Outreach and Initiatives

9. Approve Contract Modification Approved by MSRC

Items 10 through 16 - Information Only/Receive and File

10. Legislative, Public Affairs and Media Report

11. Hearing Board Report

12. Civil Filings and Civil Penalties Report

13. Lead Agency Projects and Environmental Documents Received by SCAQMD

14. Rule and Control Measure Forecast

15. Report of RFPs Scheduled for Release in February

16. Status Report on Major Ongoing and Upcoming Projects for Information Management

Dr. Lyou announced his abstention on Item No. 3 because the University of California Riverside, UCR CE-CERT and Southern California Gas Company are potential sources of income to him; and on Item No. 6 because Gladstein, Neandross and Associates is a potential source of income to him.

Supervisor Ashley noted his abstention on Item No. 1 as he was not present at the January 6, 2017 Board Meeting.

Mayor Pro Tem McCallon announced that he serves on the Board of Directors of Metrolink which is involved with Item No. 9.

Agenda Items 2, 3, 7, 13, 14 and 16 were withheld for comment and discussion.

MOVED BY MITCHELL, SECONDED BY BENOIT, AGENDA ITEMS 1, 4 THROUGH 6, 8 THROUGH 12 AND 15, APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

AYES: Ashley *(except Item #1)*, Benoit, Burke, Buscaino, Cacciotti, Kuehl, Lyou *(except Item #6)*, McCallon, Mitchell, Parker Robinson and Rutherford

NOES: None

ABSTAIN: Ashley *(Item #1 only)* and Lyou *(Item #6 only)*

ABSENT: Nelson

17. Items Deferred from Consent Calendar

2. Set Public Hearings March 3, 2017 to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations

Adopt Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

John Carver, City of Paramount, addressed the Board on Agenda Item 2 noting that the City of Paramount submitted a letter in support of Proposed Rule 1430 that was signed by the city council. The city council appreciates the scientific approach and process that AQMD has exhibited throughout this rulemaking process, as well as the fact that a hearing was held in the city to bring the process to local residents. He urged the Board to move expeditiously toward implementation of the rule to protect public health and improve air quality across the region.

(Supervisor Nelson arrived at 9:30 a.m.)

3. Execute Contracts to Conduct In-Use PM Emission Study for Gasoline Direct Injection Vehicles and Establish Renewable Natural Gas Research Center

Dr. Lyou left the room during discussion of Item No. 3.

Mayor Cacciotti requested a brief report by staff on this project and what it seeks to achieve.

Matt Miyasato, DEO/Science and Technology Advancement, explained that this request consists of two projects at the University of California, Riverside CE-CERT. The first will look at in-use emissions from light-duty gasoline direct injection vehicles, and the second project is to fund a renewable natural gas center to look at viable pathways, including an economic analysis, to achieve renewable natural gas.

Mayor Cacciotti expressed excitement for the possibility of utilizing a renewable source of fuel for heavy duty vehicles which would potentially provide much needed innovation to the industry.

Harvey Eder, Public Solar Power Coalition, noted his opposition to the District involvement with this project and commented on the hazards associated with natural gas.

Mayor Cacciotti noted that the Board is expecting to receive a report in the coming months on the results of a study performed at UCLA that looked at the impacts of natural gas emissions on human cells.

Chairman Burke explained that as a result of Mr. Eder's persistent urging for solar conversion, he is asking staff to convene a public working group to develop a new SCAQMD Solar Technologies Initiative, so that the issues can be looked at in depth and potential, cost-effective ways to include solar in implementing the AQMP can be found. He asked that a report on the progress of the Initiative be provided within six months.

Mayor Cacciotti described the contents of an article that recently ran in the Pasadena Star News regarding a new installation at Southern California Edison's Mira Loma Substation in Ontario which utilizes Tesla lithium batteries. He explained that the plant was built in 88 days and has the ability to power 15,000 homes. He expressed optimism for more widespread use of this technology in the future.

7. Issue Program Announcement for Ships at Berth and Cargo Handling Equipment Projects Under Proposition 1B-Goods Movement Program

Dr. Tom Williams, Citizens Coalition for a Safe Community, stressed the importance of increased efficiency at the Ports, and utilizing railways to reduce the amount of pollution from truck traffic.

13. Lead Agency Projects and Environmental Documents Received by SCAQMD

Richard Rojas, City of Carson, shared the contents of a letter written by Mayor Albert Robles requesting that the Board refer the Tesoro Refinery Integration Project to the Environmental Justice Review Board and Stationary Source Committee and explained that the project will integrate the Carson Tesoro Refinery with the Wilmington Refinery adding eight new large storage tanks at a total capacity of 3.6 million barrels of petroleum and will create the largest refinery west of the Mississippi River. As the lead agency, the AQMD will review and analyze the environmental impacts from

this refinery project. The final EIR is of utmost importance as it guides the City of Carson's review of and determinations related to the project. The City has a concern for its residents and the environmental impacts from the Tesoro Project. The City has made comments on the draft EIR and has met with AQMD staff twice. He requested further review and a public hearing in the City of Carson prior to the issuance of the final EIR.

Dr. Lyou asked staff to comment on the request to hold a public hearing in the community.

Barbara Baird, Chief Deputy Counsel, explained that a public hearing on the Title V permit was held in the City of Carson and testimony was received from various stakeholders. She added that staff had not previously received a request to hold a public hearing of this nature in the City of Carson, however, staff would review the potential to accommodate that request.

Dr. Lyou commented that he understands that the current request is for a hearing to be held in the community relative to the CEQA document, as well as for the Environmental Justice Advisory Group (EJAG) to review this issue. He asked staff to place the item on the agenda for the next EJAG meeting as it falls in line with their 2017 goals and objectives.

Mr. Nastri stated that staff would take that into consideration.

14. Rule and Control Measure Forecast

16. Status Report on Major Ongoing and Upcoming Projects for Information Management

Dr. Tom Williams, Citizens Coalition for a Safe Community and Save Porter Ranch, addressed the Board on Agenda Items 14 and 16 explaining that Rule 1148.3 is scheduled to be heard in three months, but there has yet to be a draft of the rule released; and he suggested better utilizing electronic resources to allow for interactive rulemaking and public input.

MOVED BY CACCIOTTI, SECONDED BY ROBINSON, AGENDA ITEM 2, 3, 7, 13, 14 AND 16 APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

AYES: Ashley, Benoit, Burke, Buscaino, Cacciotti, Kuehl, Lyou *(except Item #3)*, McCallon, Mitchell, Nelson, Parker, Robinson and Rutherford

NOES: None

ABSTAIN: Lyou *(Item #3 only)*

ABSENT: None

BOARD CALENDAR

18. Administrative Committee

19. Legislative Committee

20. Mobile Source Committee

21. Stationary Source Committee

22. Technology Committee

23. Mobile Source Air Pollution Reduction Review Committee

24. California Air Resources Board Monthly Report

MOVED BY MITCHELL, SECONDED BY CACCIOTTI, AGENDA ITEMS 18, 19, AND 21 THROUGH 24, APPROVED AS RECOMMENDED, RECEIVING AND FILING THE COMMITTEE MSRC AND CARB REPORTS AND APPROVING THE FOLLOWING POSITION ON LEGISLATION, BY THE FOLLOWING VOTE:

AYES: Ashley, Benoit, Burke, Buscaino, Cacciotti, Kuehl, Lyou, McCallon, Mitchell, Nelson, Parker, Robinson and Rutherford

NOES: None

ABSENT: None

Agenda Item	**Recommendation**
SB4 (Mendoza) Goods Movement: Allocation of Federal Funds: Goods Movement and Clean Trucks Bond Act	Support and Work with Author

20. Mobile Source Committee

Dr. Tom Williams, Citizens Coalition for a Safe Community and Save Porter Ranch, stressed the importance of converting port operations to rail to alleviate the large amounts of mobile source pollution that result from goods movement.

MOVED BY BENOIT, SECONDED BY CACCIOTTI, AGENDA ITEM 20, APPROVED AS RECOMMENDED, RECEIVING AND FILING THE MOBILE SOURCE COMMITTEE REPORT, BY THE FOLLOWING VOTE:

AYES: Ashley, Benoit, Burke, Buscaino, Cacciotti, Kuehl, Lyou, McCallon, Mitchell, Nelson, Parker, Robinson and Rutherford

NOES: None

ABSENT: None

PUBLIC HEARING

25. Adopt 2016 Air Quality Management Plan

Dr. Philip Fine, DEO/Planning and Rules, gave the staff presentation on Agenda Item 25.

Chairman Burke acknowledged the tremendous stakeholder input that was provided throughout the process of the Plan's development.

The public hearing was opened and the following individuals addressed the Board on Agenda Item 25.

VERONICA ZENDEJAS, Representing Speaker Anthony Rendon

Urged the Board to adopt a Plan that not only protects public health, but works cooperatively with industry to ensure that measurable air quality benefits are achieved. She added that indirect source rules should be developed simultaneously in the event that voluntary measures fall short of the needed emissions reduction. She commented onincentives and supported appropriate use without burdening communities. She also expressed support for adopting proposed Rule 1430 and urged more stringent monitoring requirements and expansion of the rule to other grinding sources. (Submitted Written Comments)

MAHA RIZVI, Representing Assemblymember Eloise Reyes Gomez

Stressed the importance of the Board's role to protect public from the harms of air pollution; noted the enormous impact that warehouse distribution centers have on neighboring communities; and highlighted the importance of setting clear emission reduction standards and benchmarks that will result in measurable emission reductions. Urged immediate work on indirect source rules, simultaneously with work on voluntary measures. (Submitted Written Comments)

GENE SEROKA, Port of Los Angeles

Noted the Port's shared interest in cleaning the air and meeting federal air quality standards as evidenced by their efforts to increase efficiency. He explained that the Clean Air Action Plan has resulted in 85 percent reduction in diesel particulate matter, 51 percent reduction in NOx and 97 percent in SOx emissions all while reducing GHGs by 12 percent, 9 years ahead of target. He urged the Board to avoid measures such as MOB-01 which threatens job creation; and expressed an interest in continued collaboration with the District.

*TRACY HERNANDEZ, BizFed

Explained that mobile source emission reductions are needed to meet emission reduction goals, noted that any significant amendments to the proposed plan, including indirect source regulations, will undermine the significant, transparent public process that has occurred, and asked that the Board direct staff undertake a comprehensive evaluation of the modeling underlying the AQMP which has consistently over predicted future ozone levels in the past. *(Submitted Written Comments)

ELIZABETH HAWLEY, Valley Industry Commerce Association

Expressed support for the AQMP as proposed, acknowledged the extensive public process that occurred throughout the Plan's development, and spoke against the inclusion of rules targeted at indirect sources.

CAROL BANNER, Realtors Committee on Air Quality

Expressed support for the proposed AQMP and stressed the need for solutions for clean air and affordable housing.

(Dr. Parker left at 10:30 a.m.)

EVELYN KNIGHT, Sierra Club
ALAN HERNANDEZ, Sierra Club
SELENE HERNANDEZ
MARINA BARRAGAN, Sierra Club
YVONNE WATSON
PENNY NEWMAN, Center for Community Action and Environmental Justice
IGNACIO OCHOA
CHRISTIAN GARZA
RAUL ZENDEJAS

MICHELE HASSON, Center for Community Action and Environmental Justice
RAVI CHOUDHURI, American Lung Association
*ALLIS DRUFFEL, Interfaith Power and Light
AGUSTIN CABRERA, Los Angeles Alliance for New Economy
ALEX PORTILLO
ESTHER PORTILLO, Center for Community Action and Environmental Justice
MATT ABUKARACJ-MACIAS, California League of Conservation Voters
MARY ANN RUIZ, Sierra Club
LARRY DOZIER, St. John's United Methodist Church
MARCUS CREWS, Center for Community Action and Environmental Justice
JEAN KAYANO, Center for Community Action and Environmental Justice
KIM FLOYD
DIANA ROZENDAAL, Sierra Club
LIZETTE HERNANDEZ, Sierra Club
ADA TRUJILLO, Center for Community Action and Environmental Justice
JASON MARTINEZ, Sierra Club
ANDREW REICH, Earthjustice
LORENA RODARTE, Center for Community Action and Environmental Justice
THELMY PEREZ, LA CAN
ANGEL RODRIGUEZ, Center for Community Action and Environmental Justice
GRACELIA LARES, Center for Community Action and Environmental Justice
LANA MORANO
MILTON PAEZ, Sierra Club
KYMBERLY FROLICK, Agoura Hills resident
KEENAN SHEEDY, SEIU Local 721
NAOMI CURLAND
DANIEL LEE, Sierra Club – Clean Break Committee
MICHELLE WEINER, Sierra Club – Clean Break Committee
SUSAN DEMBOWSKI, Sierra Club and SoCal 350
ASHER JONES, Sierra Club
ALICIA HECHT, Sierra Club and Clean Air Better Technology
KAY BENITEZ, Sierra Club
MARK LOPEZ, East Yard Communities for Environmental Justice
DR. LESLIE TAMPPARI
DARYL GALE, Sierra Club
*JOE MCLAUGHLIN, Sierra Club
DEBORAH JOE
AARON CRUZ, Fellowship of Active Philosophers
FABI LAO, Coalition for Clean Air
GUSTAVO REYES RAMIREZ

Described the negative health impacts that they have witnessed among their family and friends, and stressed the importance of adopting a strong AQMP which includes enforceable mechanisms to ensure much needed emissions reductions are made. *(Submitted Written Comments)

OLIVIA BREBES, Sierra Club

Spoke against the proposed Plan, which seems skewed to benefit oil companies, noted failures of the RECLAIM program, and asked the Board to do all they can to protect public health.

RICARDO ROCONCIO

Explained that cleaning the air does not have to result in job loss and that there are jobs available in the green energy sector.

BILL QUINN, California Council for Environmental and Economic Balance

Noted support for the Plan as proposed that includes regulatory actions along with incentive-based measures; and expressed the need to fully analyze any changes to the RECLAIM program before they are made.

MIKE TUNNELL, American Trucking Associations

Requested the Board to direct staff to perform a thorough evaluation of the air quality and emissions modeling that is used in development of the Plan.

JOHN HEINTZ, Regulatory Flexibility Group

Expressed support for the continued evaluation of the RECLAIM program, while preserving effective elements of program that have led to significant emissions reductions over the past 20 years; and noted their willingness to partner with the District to help identify and secure funding to identify surplus emission reductions.

ANGELA JOHNSON MESZAROS, Earthjustice
*ALICIA RIVERA, Communities for a Better Environment
ANGELICA GONZALEZ, Sierra Club
MARTA SEGURA, Center for Biological Diversity
*ADRIAN MARTINEZ, Earthjustice
SARA HUEZO

Stressed the importance of ending the RECLAIM program, implementing strict indirect source regulations, fixing emissions inventories, and making polluters responsible to bear the financial burden of cleaning the air. *(Submitted Written Comments)

DR. JIM STEWART, Sierra Club

Explained that communities surrounding the ports are extremely burdened by harmful pollution, and commented on the lack of enforceable measures over the ports in the proposed Plan.

*MARTHA ARGUELLO, Physicians for Social Responsibility – Los Angeles
TAYLOR THOMAS, East Yard Communities for Environmental Justice
MIKE CHATTOM, City of Watts resident
ANDREA LEON-GROSSMAN, Food and Water Watch
HERON CARRILLO

HILDA DUENAS, South Bay resident
MARIA REYES, East Yard Communities for Environmental Justice
FATIMA CARRERA, East Yard Communities for Environmental Justice

Explained that low income communities are severely impacted by pollution from goods movement, and urged the Board to take action to protect public health. *(Submitted Written Comments)

STEPHEN WHITNEY

Acknowledged the improvements to air quality that have been realized as a result of the SCAQMD's efforts, and requested that those efforts to clean the air continue.

AL SATTLER

Explained that a number of his family and friends had been diagnosed with Alzheimer's disease, and noted that results from a recent study link Alzheimer's disease with air quality.

Chairman Burke noted that the District is working with Dr. Keith Black, through the Brain & Lung Tumor and Air Pollution Foundation, on a study relative to Alzheimer's disease.

DAN SCHUEPBACH, Sierra Club and Invention Solutions

Offered to provide staff with solutions to clean the air.

ERLINDA MURILLO, Center for Community Action and Environmental Justice

Explained that there are natural gas storage tanks at a bus depot very close to her home, and she has been diagnosed with multiple tumors over the years she has resided there. She added that their requests for assistance have not been adequately addressed.

Dr. Lyou noted that he was under the understanding that there had been some resolution to this matter, and confirmed that he would like to visit the location as requested by Ms. Murillo.

Mayor McCallon explained that OmniTrans is in the process of replacing fuel tanks with a direct pipeline, so that will hopefully provide resolution to these concerns.

ERICKA FLORES, Center for Community Action and Environmental Justice

Explained that she resides near the intermodal center in San Bernardino, and shared that her family members have been affected by asthma and cancer. She urged the Board to regulate indirect sources to do more to protect public health.

JOHN HUSING, Inland Empire Economic Partnership
TERRI HEATH

Stressed the importance of logistics and distribution jobs and expressed support for incentive-based methods in regards to indirect sources.

GEORGE MINTER, Southern California Gas Company

Expressed support for the proposed AQMP, acknowledged the challenges associated with mobile source emissions, and stressed the importance of incentivizing low emission heavy-duty trucks. (Submitted Written Comments)

TOM GROSS, Southern California Edison

Explained that Edison is currently working on transportation electrification projects and programs to advance zero-emission transportation technologies.

CURTIS COLEMAN, Southern California Air Quality Alliance

Expressed support for the adoption of the 2016 AQMP as proposed; acknowledged the coordination amongst stakeholders that occurred throughout the development process, and noted their commitment to working with staff to investigate the objectives outlined in the plan relative to the RECLAIM program.

GEOFFREY BLAKE, Metal Finishers Association and California Small Business Alliance
BRAD JENSEN, San Gabriel Valley Economic Partnership
JAMES JACK, Coalition for Responsible Transportation
THOMAS JELENIC, Pacific Merchant Shipping Association
*WESTON LABAR, Harbor Truck Association, Harbor Association of Industry & Commerce, and Foreign Trade Association
ELIZABETH WARREN, Future Ports
*DAN HOFFMAN, Wilmington Chamber, South Bay Association of Chambers
RICHARD LAMBROS, Southern California Leadership Council
MIKE WILLIAMS, International Warehouse Logistics Association
CHRIS SHIMODA, California Trucking Association
BRYAN PALMARO, Coastal Energy Alliance
PETER HERZOG, NAIOP
CARLA WALECKA, Realtors Committee on Air Quality
RICH DINES
LEVI JAVIER, Harbor Association

Expressed support for the Plan as proposed, and acknowledged the work of various stakeholders in the development of the Plan. *(Submitted Written Comments)

JAMES BRIGHTLING, Construction Industry Air Quality Coalition

Stressed that incentive-based programs do work and provided examples of the Carl Moyer and SOON programs. (Submitted Written Comments)

DAVID PETTIT, Natural Resources Defense Council

Commented that the Board would need authority over mobile sources to

make a true impact to the region's air quality, and added that indirect source rules should be included in the Plan. (Submitted Written Comments)

BILL LAMARR, California Small Business Alliance
DAVID ROTHBART, Southern California Alliance of Publicly Owned Treatment Works
ALLISON TORRES, Eastern Municipal Water District
SARAH RASCON, Los Angeles Area Chamber of Commerce
PATTY SENECAL, Western States Petroleum Association

Expressed appreciation for the collaboration that has occurred throughout the Plan's development, and stressed that stationary sources have done their fair share and in order to reach attainment, action will need to be taken for those sources that fall under state and federal jurisdiction.

RITA LOOF, Radtech

Explained that comments she made during the Advisory Committee meetings were not reflected in Appendix 4A of the Plan, and provided an example of LED technology not being included in the energy efficiency section. (Submitted Written Comments)

BOB TERRY, People Over Pollution
CHUCK PARKER, People Over Pollution

Commented on the negative impacts created by power plants such as the Sentinel plant in the Coachella Valley; and stressed the need for a plan that is health-friendly not business-friendly.

TOM HIBBISON

Commented that in his experience as a long-shoreman, there are a number of technological advances that have been put in place and could continue to be implemented, to improve operations at the Ports, however utilizing railways would not work at the local Ports.

HARVEY EDER, Public Solar Power Coalition

Stated that the evaluation of solar in the Plan was not sufficient and stressed that solar is cost-effective and can be used in multiple applications to produce needed emission reductions.

Mayor Cacciotti noted that community choice aggregation programs are being deployed in Los Angeles County to allow for the potential to utilize solar technologies instead of electric power.

Chairman Burke commented on his support for implementing the use of solar water heaters.

*RICK CAMERON, Port of Long Beach
CHRIS CANNON, Port of Los Angeles
DAVID SERRATO, ILWU Local 13

Highlighted the successes that the Ports have seen through utilizing advanced technologies, and noted their commitment to further collaboration to meet attainment goals. *(Submitted Written Comments)

DR. RUDAYNA GHABASH

Commented that as a veterinarian she has witnessed negative health effects in animals seemingly related to air pollution; and stressed the need for innovation.

FLORENCE GHARIBIAN, Del Amo Action Committee

Stressed the importance of protecting communities that have been unfairly impacted by large sources of pollution.

PROFESSOR MICHAEL SALMAN, UCLA

Expressed support for CMB-01 and CMB-03 to address gas flaring that occurs throughout the region.

LADONNA DICAMILLO, BNSF Railway & Union Pacific Railroad

Expressed support for the AQMP as proposed, spoke against the inclusion of indirect source rules, and noted their interest in participating in an incentive funding working group to work collaboratively on finding solutions.

MARK MORRIS, Save Porter Ranch

Explained that his experience with the Aliso Canyon gas leak has made him unable to trust industry, and stressed the need for enforceable regulations.

DARRELL PARK

Urged the Board to start over with a new plan, and stated that industry has been too involved in the development process.

PAUL SCOTT, Santa Monica resident

Stressed the importance of ending reliance on fossil fuels and utilizing renewable energy.

KURT KARPEROS, California Air Resources Board

Expressed appreciation to District staff for their collaboration in designing the mobile source strategies and measures in the AQMP and the complimented strategies that CARB has worked on. The actions of both agencies on regulations will be needed to achieve large mobile source emission reductions. He noted that CARB will be considering the AQMP and also voting on CARB commitments for adopting standards for cleaner cars and truck at their Board meeting in March.

MAGDALENA GUILLEN, Paramount Community Coalition

Urged the Board to adopt a strong AQMP to hold companies accountable to use the best available control technologies to protect community members. She also expressed support for adopting proposed Rule 1430 to address hexavalent chromium emissions.

Written Comments Submitted by:

Jane Affonso, Redondo Beach resident
Patricia Appel, Laguna Beach resident
Elvira Arias, Harbor City resident
Charles B., Tarzana resident
Christa Babst, West Hollywood resident
Marybeth Bangert, Santa Ana resident
Miriam Baum, Rancho Cucamonga resident
Ann Bein, Los Angeles resident
Karen Berger, Montrose resident
Sherrie Berlin, Playa Del Rey resident
Andrea Bonnett, Altadena resident
Kyle Bracken, Los Angeles resident
Victoria Brandon, Northridge resident
Robert Burk, Los Angeles resident
Christina Burton, Apple Valley resident
Jamie Castaneda, Sierra Madre resident
Marian Carter, West Covina resident
Carina Chadwick, Pasadena resident
Phyllis Chavez, Santa Monica resident
Jean G. Cochran, Pomona resident
Elizabeth Connor, San Juan Capistrano resident
Joseph Dadgari, Los Angeles resident
Susan Davenport, Simi Valley resident
Ellen Davis, Los Angeles resident
Javier Del Valle, Montebello resident
Arthur Delgadillo, Lakewood resident
Carolyn Dennison, Garden Grove resident
Karla Devine, Manhattan Beach resident
John Edman, Morgan Hill resident
Dan Esposito, Manhattan Beach resident
Tony Fadale, Redondo Beach resident
Sandra Fernandez, Los Angeles resident
Tom Fray, Downey resident
Jan Freed, Glendale resident
Mercedes Garcia-Balboa, Riverside resident
Gene Golden, Rancho Santa Margarita resident
Yazmin Gonzalez, Bellflower resident
Fred Granlund
Rosemary Graham-Gardner, Manhattan Beach resident
Joyce Greene, Tarzana resident
Holly Hall, Temecula resident
Lois Harris, Claremont resident
James Hartung, Santa Monica resident
Laura Herndon, Burbank resident
Paula Hollie, Laguna Woods resident
Katherine McKalip, Costa Mesa resident
Donna Malbon, Long Beach resident
Larry Margo, Valley Village resident
Sharon Markenson, Canoga Park resident
Mary M Mason, Huntington Beach resident
Mary Meehan, Los Angeles resident
Ron Melin, Torrance resident
Linda Mellen, Newport Beach resident
Kent Minault, Sherman Oaks resident
Jason Mott, Huntington Beach resident
Tom Nulty Jr., Dana Point resident
Beatriz Pallanes, Santa Ana resident
Anne Parzick, Corona Del Mar resident
Robert Porter, Los Angeles resident
Susan Porter, Pasadena resident
Fiona Priskich, Swan View resident
Ivy Rappaport, Los Angeles resident
F. Carlene Reuscher, Costa Mesa resident
Merilie Robertson, West Hills resident
Ann Rushton, Sherman Oaks resident
Arthur St. Clair, Santa Monica resident
Donald Sage Mackay, South Pasadena resident
Marguerite Shuster, Sierra Madre resident
Marc Silverman, Los Angeles resident
Twikie Simms, Anaheim resident
Joan Sitnick, Encino resident
Neal Steiner, Los Angeles resident
Joseph Szabo, Los Angeles resident
Barbara Trees, Tujunga resident
Julia Vetrie, Canyon Country resident
Kari Walters, Pacific Palisades resident
Susan Watts, Riverside resident
Jacqueline Welsh, Inglewood resident
Lillian Wilkinson, Porter Ranch resident
Kevin Wightman, Sylmar resident
Jenny Wilder, Apple Valley resident
Mary Will, Upland resident
Barbara Williamson, Costa Mesa resident
Tessa Williamson, Canyon Country resident
Maggie Wineburgh-Freed, Los Angeles resident
Laura Wright, Los Angeles resident
Jessica Wodinsky, Los Angeles resident
Jennifer Kim Zeller, Pacific Palisades resident
AQMD Environmental Justice Advisory Committee Members
Douglas S. DeLong, DDU Enterprises, Inc.

Marianne Hunter, Rancho Palos Verdes resident
Darynne Jessler, Valley Village resident
Alena Jorgensen, Temple City resident
Diane Joyce, Temecula resident
Joan Kelly, Rancho Palos Verdes resident
Barbara King, Los Angeles resident
John Lamb, Sierra Madre resident
Bill Lesher, Claremont resident
Lauren Linda, Laguna Woods resident
Dale McCart, Irvine resident
Stas Margaronis
John Yi, American Lung Association
George T. Boyle, Quik Pick Express, LLC
John DeWitt, John DeWitt, Inc.
Jimi Reed, PTS Staffing Solutions
James Jack, Coalition for Responsible Transportation
Liz Shapiro
Tanya Niu, Americas Radcure
James E. Enstrom, UCLA and Scientific Integrity Institute
4,962 Sierra Club Members and Supporters
Dene H. Taylor, Specialty Paper & Films Inc.
Steve Troth
Mike Boretz
Sandy Cajas, Regional Hispanic Chamber of Commerce
George Nichol, Arena Painting Contractors, Inc.
Dr. Antonie K. Churg
William Jordan
Bruce Campbell, Los Angeles resident
Matthew Palmer, Long Beach resident
John McCabe, MEHS Consulting
Sara Lamm, Los Angeles resident
Eliza Howard, Los Angeles resident
Heather Fogarty, Los Angeles resident
Dawn McIntosh, Port of Long Beach
Michael Johnson, Roly's Trucking Inc.
David Chiu, Krisda Inc.
Jerry Mow, Three Rivers Trucking
Roger Ostergaard
Paul Conrad, Total American Investment Company

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

Mayor Cacciotti asked staff to elaborate on the options under consideration for transitioning out of the RECLAIM program, and questioned whether it would be possible to remove a particular industry from the program and focus on that industry in a different fashion than the others.

Dr. Fine responded that there are numerous concepts that could be considered and they will be fully vetted by a working group of all stakeholders. He explained that there are a variety of ways in which certain facilities could be handled, and cautioned that due to the complexity of the program, sun-setting it will take a large effort. The proposed Plan commits to reductions of 5 tons per day by the year 2031, however the District is obligated by state law to achieve those reductions as early as possible to maintain equivalency with command and control.

Mayor Cacciotti commented that the proposed transition period is too long and that the transition should be done as expeditiously as possible to reduce emissions.

Mr. Nastri replied that the date given in the plan is simply an initial estimate while the intention remains to obtain the 5 tons of NOx reductions as expeditiously as practicable. The proposed working group will be able to address the various challenges that will be involved and determine the proposed timeline for the reductions. He anticipates a report on the working group's progress can be presented to the Board within 4 to 6 months of the Plan's adoption.

COUNCILMAN ROBINSON MOVED TO APPROVE THE 2016 AIR QUALITY MANAGEMENT PLAN, AS RECOMMENDED. THE MOTION WAS SECONDED BY SUPERVISOR NELSON.

Supervisor Kuehl acknowledged the years of work that stakeholders put into the Plan's development, expressed concern with the lack of enforceable measures present in the proposed Plan, and commented on the need to regulate indirect sources to reach emission reduction targets. She proposed amendments to measures MOB-01, MOB-03, MOB-04, MOB-07 and MOB-08 to address indirect sources and the District's ability to regulate fleets.

Councilwoman Mitchell questioned whether postponing the item to the March Board meeting would affect the ability of CARB to place the matter on their March Board meeting agenda as planned. She noted her intention to bring a motion regarding CMB-05, the RECLAIM portion of the Plan, to accelerate the 5 tons per day NOx emission reduction commitment to no later than 2025 and to transition the RECLAIM program to a command-and-control regulatory structure requiring the BARCT level controls as soon as practicable, recognizing that unwinding that RECLAIM program is very complicated and will require a working group to determine how the process will proceed. She suggested the potential to approve the remainder of the Plan and continue those sections that have been proposed to be amended by Supervisor Kuehl and herself for further discussion.

Councilman Robinson explained that he understands the importance of balancing environmental stewardship with job retention, and he feels the proposed Plan does that. He acknowledged the efforts of all stakeholders involved in the process of development of the Plan and urged adoption of the Plan as proposed to move forward in meeting the region's attainment goals. He asked staff to clarify what the Plan includes in the event the voluntary measures relative to the Ports do not work.

Mr. Nastri explained that specifically regarding the Ports, there is a series of processes and steps that are described in the Plan, including convening a working group which will look at the inventory and the technology available, and although it is similar to what is done in a rulemaking process, it is meant to be a collaborative effort to gauge progress on how the voluntary measures are working. He added that in the event progress stalls, the process could quickly pivot to a rulemaking effort as all of the groundwork has been laid for that process.

Councilmember Robinson noted that the incentive-based measures in the Plan may do more to spur innovation as they promote collaborative action between the Ports and the District to meet needed reductions, as opposed to creating a culture where litigation is imminent if the proper actions are not taken. He expressed concerns with further delay of the Plan, which should be implemented

as soon as possible. He added that incentives help small businesses to stay competitive and grow.

Supervisor Nelson acknowledged that while the proposed Plan may not be a total solution to the challenges ahead, it is an appropriate Plan that will promote forward progress, and urged for an expeditious adoption so that work can begin on putting measures in place.

Supervisor Rutherford expressed support for the comments made by Supervisor Nelson, and asked if the plan is continued to the March meeting, staff could address the concerns about modeling that were raised by several speakers and in written comments. She also asked whether written comments could still be submitted since the public hearing was closed.

Dr. Lyou acknowledged all the efforts involved in developing the AQMP, and explained that the implementation of all of the various aspects of the Plan will be the biggest challenge. He added that since the document is so complex and the Board has not previously had an opportunity to provide input on the Plan as a whole, it might be prudent to postpone a decision on the item until Dr. Parker can be present. He suggested the addition of a paragraph dedicating the Plan to Supervisor Benoit.

MAYOR CACCIOTTI MOVED TO CONTINUE THE CONSIDERATION OF ADOPTION OF THE 2016 AIR QUALITY PLAN TO THE MARCH 3, 2017 BOARD MEETING. THE MOTION WAS SECONDED BY SUPERVISOR KUEHL AND CARRIED BY THE FOLLOWING VOTE:

AYES:	Ashley, Benoit, Burke, Cacciotti, Kuehl, Lyou, Mitchell, Robinson, Rutherford
NOES:	Buscaino, McCallon and Nelson
ABSENT:	Parker

OTHER BUSINESS

26. Approve Schedule of Activities to Implement Draft Financial Incentives Funding Action Plan for 2016 AQMP

AGENDA ITEM 26 WAS CONTINUED TO THE MARCH 3, 2017 BOARD MEETING AT STAFF'S RECOMMENDATION AND WITH THE CHAIRMAN'S CONCURRENCE.

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

Dr. Tom Williams, Citizens Coalition for a Safe Environment and Save Porter Ranch, expressed concern about what emissions actually came out of the leaking well at the Aliso Canyon gas storage facility, and commented on proposed Rule 1148.3 regarding underground gas storage which is scheduled to be heard by the Board in the coming months.

Harvey Eder, Public Solar Power Coalition, spoke about the need for obtaining funding for low income individuals to receive solar-power systems.

Yvonne Watson inquired about the vehicle mileage tax being investigated as part of the AQMP Funding Plan.

Tom Hibbison questioned whether written comments would still be accepted as part of the record for the AQMP. He explained that maintaining economic balance in implementing air quality regulations is key.

Kurt Wiese confirmed that written comments could still be submitted prior to the next Board meeting.

Dan Schuepbach, Sierra Club and Invention Solutions, expressed a desire to work with the Board to achieve air quality goals.

CLOSED SESSION

The Board recessed to closed session at 2:25 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 actions are:

In the Matter of SCAQMD v. Southern California Gas Company, Aliso Canyon Storage Facility, SCAQMD Hearing Board Case No. 137-76 (Order for Abatement); and

People of the State of California, ex rel SCAQMD v. Southern California Gas Company, Los Angeles Superior Court Case No. BC608322; Judicial Council Coordinated Proceeding No. 4861.

Following closed session, District Counsel Kurt Wiese announced that there were no reportable actions taken in closed session.[1]

ADJOURNMENT

There being no further business, the meeting was adjourned by Kurt Wiese at 2:45 p.m.

The foregoing is a true statement of the proceedings held by the South Coast Air Quality Management District Board on February 3, 2017.

Respectfully Submitted,

Denise Garzaro
Clerk of the Boards

Date Minutes Approved: _____

_____
Dr. William A. Burke, Chairman

[1] The action taken in Closed Session has since become reportable and a report of that action is on file with the Clerk of the Board's office.

ACRONYMS

AQMP = Air Quality Management Plan
BARCT = Best Available Retrofit Control Technologies
CaFCP = California Fuel Cell Partnership
CARB = California Air Resources Board
CE-CERT =College of Engineering-Center for Environmental Research and Technology
CEQA = California Environmental Quality Act
DEO = Deputy Executive Officer
EIR = Environmental Impact Report
EJ = Environmental Justice
FY = Fiscal Year
MSRC = Mobile Source (Air Pollution Reduction) Review Committee
NOx = Oxides of Nitrogen
PM = Particulate Matter
RECLAIM = REgional CLean Air Incentives Market
RFP = Request for Proposals
U.S. EPA = United States Environmental Protection Agency

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 2

PROPOSAL: Execute Contracts with Consultants to Provide AB 2588 Assistance

SYNOPSIS: At its November 4, 2016 meeting, the Board approved the release of an RFP for AB 2588 Consultant Assistance to provide support to staff in the review of AB 2588 and Rule 1402 reports over the next four years. Eight proposals were received and scored considering both technical merit and costs. This action is to award contracts to six of the eight firms who responded to the RFP. Funds for this project, in an amount not to exceed a total of $500,000, will be allocated from the Air Toxics Special Revenue Fund (15) over an initial two-year period. Following the initial two-year period, the Executive Officer will have the option to extend each contract once per year for the next two years, and increase the total amount allocated up to another $250,000 per year, for a total cost up to $1,000,000 spread between all six firms over the full four-year period of these contracts. The Air Toxics Special Revenue Fund is specifically designed to provide funds to manage the AB 2588 program from fees paid by AB 2588 facilities.

COMMITTEE: Administrative, February 10, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Authorize the Chairman to fund and execute contracts for a total program cost not to exceed $500,000 over a two-year period with the following contractors:
   - Alta Environmental in an amount not to exceed $85,000;
   - Davenport Engineering in an amount not to exceed $85,000;
   - Environmental Science Associates in an amount not to exceed $85,000;
   - Integra Environmental Consulting in an amount not to exceed $75,000;
   - Trinity Consultants in an amount not to exceed $85,000; and
   - Yorke Engineering in an amount not to exceed $85,000;

2. Authorize the Executive Officer to have the option to extend these contracts following the initial two-year period once per year for the next two years, and increase the contract amount up to $250,000 per year spread between all six firms, for a total cost up to $1,000,000.

3. Authorize the Executive Officer to amend the contracts as necessary to reallocate funding between the contractors based on program needs, without exceeding the total program costs and only up to $75,000 per contract per fiscal year.

Wayne Nastri
Executive Officer

PF:SN:IM:VM

Background

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (commonly known as AB 2588) established a statewide program for the inventory of air toxics emissions from individual facilities as well as requirements for Health Risk Assessments, public notification of potential health risks, and risk reduction. In March 2015, the Office of Environmental Health Hazard Assessment (OEHHA) approved revisions to its Risk Assessment Guidelines which increased the estimated residential cancer risk by approximately three times compared to the previous guidelines with no changes in emissions. These changes reflect recent scientific studies that have found greater sensitivity of children to cancer causing compounds than previously considered. The revised OEHHA Risk Assessment Guidelines were incorporated in SCAQMD's Rule 1402 which is designed to implement the AB 2588 program. As a result, SCAQMD staff is expecting that more facilities will be required to submit Air Toxics Inventory Reports and possibly Health Risk Assessments, Risk Reduction Plans, and Voluntary Risk Reduction Plans.

At its November 4, 2016 meeting, the Board approved the release of an RFP for AB 2588 Consultant Assistance to provide support to staff in the review of AB 2588 and Rule 1402 reports over the next four years. The total amount of funding available for this RFP is $1,000,000.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids was 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. Notice was also provided to professional organizations such as the Association of Environmental Professionals, and to academic researchers in this field.

Notice of the RFP was emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, including small businesses, and placed on SCAQMD's website (www.aqmd.gov).

Proposal Evaluation
Six participants representing six companies attended a voluntary bidder's conference held on November 17, 2016 at SCAQMD headquarters. In response to RFP #P2017-08, a total of eight proposals were received by 2:00 p.m. on December 16, 2016, the closing date of the RFP solicitation. The proposals were reviewed by a four-member panel in accordance with established SCAQMD guidelines outlined in the RFP. The four-member panel was comprised of an SCAQMD Planning and Rules Manager, Program Supervisor, Senior Air Quality Engineer, and Air Quality Specialist. All of these individuals have experience with the AB 2588 program and review of toxic emission inventories and health risk assessments. The panel breakdown was one Asian/Pacific Islander, one of Middle Eastern descent, and two Caucasian; two females and two males. Each proposal was required to meet a minimum technical score of 56 out of 70 points in order to be considered for further evaluation. The technical proposals were evaluated according to the criteria specified in the RFP, including the consultants' understanding of the requirements of the RFP, technical qualifications, and past experience with AB 2588 reports. Six of the eight consultants scored at least the minimum number of points required on the technical aspect of the proposal. Costs in each proposal ranged from about $1,000 for emissions inventory reviews of less complex facilities, to about $10,000 for the review of complicated health risk assessments and dispersion modeling, which is within the expected range of costs for this type of work. After contract execution, individual task orders will be sent out for bid to these consultants as work arises. Staff will then select consultants for each individual task, taking into account cost, project or source expertise, and any potential conflicts of interest applicable to that task.

Benefits to SCAQMD
The proposed work will provide SCAQMD with supplemental resources needed to provide reviews for the expected increase in submitted Quadrennial Emission Inventories, Air Toxics Inventory Reports, Health Risk Assessments, Voluntary Risk Reduction Plans and Risk Reduction Plans. This increased workload is required due to recent updates to the state's health risk assessment guidelines that must be followed in the AB 2588 program.

Resource Impacts
Awards under this RFP are estimated to total up to $1,000,000 and will be made from the Air Toxics Special Revenue Fund (15), which is designed to provide support specifically for the work proposed for this RFP, and which has sufficient funds for this project.

Attachment
Evaluation of Proposals for RFP #P2017-08

Attachment

EVALUATION OF PROPOSALS FOR RFP # P2017-08

			Potential Additional Points*							
Proposer	**Technical Points**	**Cost Points**	**Small Business**	**DVBE** Business**	**Use of DVBE Sub-contractor**	**Low Emission Vehicle Business**	**Local Business**	**Off-Peak Hrs Delivery Business**	**Most Favored Customer**	**Final Score**
Total Points Possible	***(70)***	***(30)***	***(10)***	***(10)***	***(7)***	***(5)***	***(5)***	***(2)***	***(2)***	***(115)***
Yorke Engineering	66	23	10				5			104
Trinity Consultants	65	29					5		2	101
Integra Environmental Consulting	60	26	10		7		5		2	101
Alta Environmental	58	28	10							96
Environmental Science Associates	57	23	10		7		5			95
Davenport Engineering	56	24	10				5		2	95
Montrose Environmental Group	55	Disqualified***								
Stepman, Pinsonnault and Associates Inc., DBA Verdant Environmental	51	Disqualified***								

**Proposals could receive a maximum of 15 additional points in these categories in addition to technical and cost points.*

***DVBE = Disabled Veteran-owned Business Enterprise*

****Proposals that did not receive a minimum score of 56 Technical Points did not receive further consideration*

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 3

PROPOSAL: Approve Year-Round Electric Lawn Mower Rebate Program and Authorize Rebate Payments

SYNOPSIS: For the past 14 years, the SCAQMD has implemented an Electric Lawn Mower Exchange Program. Over the last two years, the Program has experienced declining exchanges, likely due to the severe drought across California and market saturation. Staff proposes to modify the Program by offering a year-round Electric Lawn Mower Rebate Program on a first-come, first-served basis, where participants would receive a rebate through an online application process after purchasing a new battery-electric lawn mower and scrapping their old gasoline-powered lawn mower at a participating licensed dismantler. This action is to approve the year-round Electric Lawn Mower Rebate Program on a first-come, first-served basis and authorize the Executive Officer to issue rebates to program participants in a total amount not to exceed $250,000 from the Rule 2202 Air Quality Investment Fund (27).

COMMITTEE: Mobile Source, February 17, 2017; Recommended for Approval

RECOMMENDED ACTION:
Approve the implementation of the year-round Electric Lawn Mower Rebate Program on a first-come, first-served basis and authorize the Executive Officer to issue rebates under the terms of the program for the purchase of a battery-operated electric lawn mower in a total amount not to exceed $250,000 from the Rule 2202 Air Quality Investment Fund (27).

Wayne Nastri
Executive Officer

MMM:FM:LCM:VY

Background

For the past 14 years, the SCAQMD has implemented the Electric Lawn Mower Exchange Program for residents in SCAQMD's four-county region. The Program required the public to pre-register to attend one of the events where they would exchange an operable gasoline-powered lawn mower for a new battery-electric model at a discounted price. Over the past two years, the number of exchanges has declined by 64 and 86 percent, respectively, likely due to the severe drought across California and market saturation of battery-electric lawn mowers. In 2015, the State of California ordered a 25 percent reduction in urban water usage in first-ever mandatory statewide reductions. As a result, government agencies within the SCAQMD jurisdiction have responded by offering incentives to remove lawns and limit residential watering. Additionally, when the Program was originally initiated, there were only two companies manufacturing cordless electric lawnmowers. Today, there are over 20 companies manufacturing electric lawn mowers, with many of them available for purchase at local hardware and home improvement stores.

Proposal

To respond to these challenges, staff proposes to modify the Program by offering a year-round Electric Lawn Mower Rebate Program on a first-come, first-served basis. The Program will allow residents living within the SCAQMD jurisdiction to turn in their fully functional old gasoline-powered lawn mower to a participating dismantler for permanent destruction and receive a rebate towards the purchase price of a new battery-operated electric lawn mower through an online application. The public will have the flexibility of purchasing their electric mower from an extensive list of manufacturer-authorized retailers or dealers, including hardware and home improvement stores. Once the online application, including proof of dismantling the old mower, and the purchase verification is submitted to the SCAQMD, a rebate check will be issued for every gasoline-powered lawn mower exchanged for a cordless zero emission electric lawn mower.

The eligible rebate amounts are based on the purchase price of the battery-electric lawn mower and do not include costs such as taxes, fees, accessories and delivery charges. The proposed rebate amounts are:

- $150 for a mower with a purchase price of $250 or less*;
- $200 for a mower with a purchase price of $251 to $400; and
- $250 for a mower with a purchase price of more than $400.

The SCAQMD will also partner with several dismantlers in the Basin for implementation of the Program, and staff will post a list of both eligible electric lawn mower manufacturers and participating dismantlers on SCAQMD's website.

* Rebate cannot exceed cost of lawn mower.

This action is to approve the implementation of the year-round Electric Lawn Mower Rebate Program on a first-come, first-served basis from the Rule 2202 Air Quality Investment Fund (27). This Program will continue until all funds are exhausted, after which staff may return to the Board to seek approval for additional funds.

Benefits to SCAQMD

The Electric Lawn Mower Rebate Program reduces exposure to harmful emissions from the use of zero emission electric lawn mowers within the South Coast Air Basin. Since replacement of gasoline-powered lawn mowers are not currently required, their replacement with zero emission electric lawn mowers will achieve surplus emission reductions of carbon monoxide, nitrous oxides, hydrocarbons and particulate matter. The year-round program will also significantly reduce staff resources, enabling staff to focus on other incentive activities.

Resource Impact

The total cost of the proposed program will not exceed $250,000 from the Rule 2202 Air Quality Investment Fund (27).

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 4

PROPOSAL: Execute Contract to Develop and Demonstrate Electric School Buses with Vehicle-to-Grid Capability

SYNOPSIS: DOE recently awarded the Blue Bird Body Company, Inc. $4,902,237 for the development and demonstration of electric school buses with vehicle-to-grid (V2G) capability. Blue Bird Body Company proposes to develop and manufacture V2G electric school buses and demonstrate them in the Rialto Unified School District. Staff proposes to cost-share this project. This action is to execute a contract with Blue Bird Body Company for the development, manufacture and demonstration of electric school buses in an amount not to exceed $1,900,000 from the Lower-Emission School Bus Fund (33).

COMMITTEE: Technology, February 17, 2017; Recommended for Approval

RECOMMENDED ACTION:
Authorize the Chairman to execute a contract with Blue Bird Body Company for the development, manufacture and demonstration of electric school buses in an amount not to exceed $1,900,000 from the Lower-Emissions School Bus Fund (33).

Wayne Nastri
Executive Officer

MMM:FM:NB:JI

Background
Blue Bird Body Company (Blue Bird) is one of the largest suppliers of school buses in the South Coast and has previously developed and commercialized alternative fuel buses. Blue Bird has been investigating methods of introducing electric vehicles into the national school bus market for the last decade. In 2010, Blue Bird hired consulting firm National Strategies, LLC, (NSI) to conduct an independent evaluation of market entry strategies. In 2015, Blue Bird reengaged with NSI and in parallel conducted its own independent evaluation of potential electric drivetrain suppliers. At the end of the process, Blue Bird reaffirmed the selection of TransPower, located in Escondido,

California, as the company best qualified to support development of battery-electric school bus technologies and components. With TransPower's input, Blue Bird has taken the lead role in moving electric school buses toward commercial production. For nearly a year, Blue Bird and TransPower have been collaborating to develop designs, test procedures and manufacturing plans to enable mass production of Blue Bird buses using electric drive components developed by TransPower.

Two prototype buses were previously developed by NSI and TransPower, cofunded by the SCAQMD, and are currently being demonstrated by the Torrance Unified School District (USD).

As a follow-up to the prototype buses, Blue Bird applied to the DOE for funding to further develop components and systems required for the commercialization of electric school buses. The DOE recently awarded Blue Bird $4,902,237 to develop, manufacture and demonstrate eight electric school buses with vehicle-to-grid (V2G) capabilities in the Rialto USD.

Proposal

Blue Bird proposes to develop a plug-in battery-electric drive system optimized for use in Types C and D (Class 6-7) school buses with V2G and vehicle-to-building (V2B) power export capabilities. The project goal is to advance the technology readiness of medium-duty electric drive components developed by TransPower and subject them to Blue Bird's intensive testing and certification procedures.

Blue Bird's strategy is to improve performance and efficiency, thereby reducing operating costs, and create new opportunities for school districts to generate revenues through the export of battery power to the grid. This strategy led the Blue Bird team to select three critical powertrain technologies for refinement: automated manual transmission (AMT), battery management system (BMS) and inverter-charger unit (ICU). TransPower's AMT allows the drive motor to operate at peak efficiency across the vehicle speed range without performance compromises. Further energy system gains can be achieved with advanced BMS technologies that are being developed by TransPower. These technologies promise to minimize parasitic energy losses and optimize usable energy from a battery subsystem of a given size. Finally, the high-efficiency ICU used in TransPower's drive system further enhances efficiency, facilitates export of power to external markets, and enables VTB capability in support of micro-grid and emergency response scenarios.

In the proposed project, the team will focus on building four electric school buses that will be subjected to Blue Bird's usual safety and durability test program. This includes crash testing of one to two buses and durability testing of another. This will be followed by the manufacture and integration of eight additional buses to be deployed by Rialto USD.

The eight production buses, upon receipt of certification from the California Highway Patrol, will be placed into service with Rialto USD. The final task will be development of a Market Transformation Plan describing how Blue Bird, with the assistance of its team members, will commercialize electric school buses using the demonstrated drive system.

Sole Source Justification
Section VIII.B.2 of the Procurement Policy and Procedure identifies provisions by which sole source awards may be justified. This request for a sole source award is made under provision B.2.d: Other circumstances exist which in the determination of the Executive Officer requires such waiver in the best interest of the SCAQMD. This request for sole source award is made under provision B.2.d(1): Projects involving cost-sharing by multiple sponsors. Project partners include the DOE, TransPower, Rialto USD, Blue Bird Body Co, and NSI.

Benefits to SCAQMD
Projects to support implementation of various clean fuel vehicle incentive programs are included in the *Technology Advancement Office Clean Fuels Program 2017 Plan Update* under the core category of "Electric/Hybrid Technologies & Infrastructure". This project is to develop and demonstrate zero emission electric school buses with V2G capability. Successful demonstration of such projects will contribute to the attainment of clean air standards in the South Coast Air Basin by eliminating PM and NOx emissions from replaced diesel and alternative fuel school buses.

Resource Impacts
The total cost for this proposed project is $9,804,528, with cash contributions comprised of $4,902,237 from DOE, $160,000 from Rialto USD and up to $1,900,000 proposed from the SCAQMD from the Lower-Emissions School Bus Fund (33). In addition, a combination of cash and in-kind contributions are comprised of $2,648,653 from TransPower, $128,040 from Blue Bird and $65,598 from NSI. Proposed funding is broken down in the table below.

Table: Proposed Funding

Project Partner	Funding Amount	Percent
DOE	$4,902,237	50%
TransPower	$2,648,653	27%
Rialto USD	$160,000	2%
Blue Bird Body Co.	$128,040	1%
NSI	$65,598	1%
SCAQMD (*requested*)	$1,900,000	19%
Total	**$9,804,528**	**100%**

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 5

PROPOSAL: Execute Contract to Develop and Demonstrate Medium-Heavy Duty (Class 5-7) Plug-in Hybrid Electric Vehicles for Work Truck Applications

SYNOPSIS: DOE recently awarded $2,932,193 to Odyne Systems, LLC, for the development and demonstration of a medium-heavy duty (Class 5-7) plug-in hybrid electric vehicle (PHEV) for work truck applications. Odyne proposes to develop and demonstrate medium-heavy duty (Class 5-7) PHEV work trucks with reduced fuel consumption and fully electrified jobsite functions. Staff proposes to cost-share this project. This action is to execute a contract with Odyne Systems, LLC, for the design, manufacture and demonstration of medium-heavy duty (Class 5-7) PHEV work trucks in an amount not to exceed $900,000 from the Clean Fuel Fund (31).

COMMITTEE: Technology, February 17, 2017; Recommended for Approval

RECOMMENDED ACTION:
Authorize the Chairman to execute a contract with Odyne Systems, LLC, for the development and demonstration of medium-heavy duty (Class 5-7) plug-in hybrid electric vehicles for work truck applications in an amount not to exceed $900,000 from the Clean Fuels Fund (31).

Wayne Nastri
Executive Officer

MMM:FM:NB:SH

Background
Odyne Systems, LLC, is a clean technology company that develops and manufactures propulsion systems for medium- and heavy-duty plug-in hybrid electric vehicles (PHEVs). Odyne has developed proprietary and patented hybrid technology combining electric power conversion, power control and energy storage technology with standard electric motors, storage batteries and other components. Odyne's plug-in hybrid

technology has been applied to commercial truck applications including bucket trucks, digger derricks and compressor trucks. These development efforts have also benefited from a $50 million program funded through the DOE and CEC, with programmatic administration by the SCAQMD. The existing development efforts have yielded a modular PHEV system that can be installed on new and retrofit vehicles, as the packaging requirements of the hybrid system need to be taken into account during the vehicle's initial build. Additional engineering efforts are needed to develop a system that has lower emissions, improved performance, quiet jobsite operation, lower fuel consumption and reduced operating and maintenance costs.

Proposal

Odyne proposes to partner with the Freightliner Trucks, Allison Transmission, National Renewable Energy Laboratory (NREL), Oak Ridge National Laboratory (ORNL), Duke Energy, Sempra Energy, AVL, LG Chem and SCAQMD to design, develop and demonstrate a new generation of medium-heavy duty (Class 5-7) PHEV work truck that achieves a significant reduction in fuel consumption versus a conventional vehicle baseline. The plug-in hybrid technology will include idle reduction, launch assist, regenerative braking, in-cab climate controls and exportable power, improving vehicle efficiency while driving and eliminating idling and emissions during operation at a jobsite. This proposal addresses significant improvements in powertrain integration and adaptive control, a higher level of hybridization, fully electric jobsite operation and a low-cost modular battery pack solution through integrated three development streams into a final vehicle.

The development and demonstration project will include the following:

- *Powertrain Development and Optimization*: Odyne, ORNL, Allison Transmission and Freightliner Trucks will develop an integrated PHEV powertrain simulation, develop optimization strategies against real-world vocational duty cycles provided by NREL's analysis of a prior DOE medium-duty heavy-duty (MD-HD) work truck fleet, and validate the resulting system on ORNL's hardware-in-the-loop facility.

- *Battery System Development*: AVL, in conjunction with LG Chem and Odyne, will develop and validate a modular battery system based on commercially available light-duty cells and modules which will meet the performance requirements of the target vocational truck market as established by NREL's analysis of the full-day and full-year work cycles of a vocational MD-HD work truck fleet.

- *Vehicle Integration*: Odyne will work with Freightliner Trucks to integrate the PHEV powertrain, battery system, control systems and electrified jobsite equipment into the medium-heavy duty (Class 5-7) vocational work truck. NREL will provide testing and full cycle analysis of the final test vehicle and will monitor and provide summary results of the evaluation fleet.

- *Demonstration*: Ten trucks will be demonstrated in operation for a period of 12 months, five by Duke Energy in Duke Energy's service territory (the Carolinas, the Midwest and Florida) and five by Sempra Energy in SCAQMD's jurisdiction. These vehicles will consist of bucket, underground service or similar medium-heavy duty vocational work trucks. If Sempra Energy (including affiliate Southern California Gas Company) cannot commit to locating five vehicles in the designated area, other utilities including Los Angeles Department of Water & Power have expressed interest in fulfilling the commitment of cost-share and SCAQMD deployment.

The goals of the project are to significantly reduce fuel use and emissions, reduce costs through integration of high volume battery modules, system and component cost reductions, and further integration of the hybrid, vehicle and powertrain systems, ultimately leading to air quality benefit and an improved return on investment.

Sole Source Justification
Section VIII.B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. This request for a sole source award is made under provision B.2.d.: Other circumstances exist which in the determination of the Executive Officer require such waiver in the best interest of the SCAQMD. Specifically, these circumstances are: B.2.d.(1) Project involving cost sharing by multiple sponsors. The multiple sponsors contributing financially to this project include DOE and Odyne.

Odyne, the PHEV system installer, is the project leader. Odyne offers the plug-in hybrid system on a medium- or heavy-duty truck that delivers greater fuel efficiency both while driving and at the worksite. The company sells its unique modular system for new and retrofit applications direct to truck manufacturers and through a global distribution and service network including Altec, Terex Utilities and selected Allison Transmission distributors.

The vehicle chassis manufacturer, Freightliner, is supporting the project through systems engineering of the PHEV integration and vehicle control system interface. Allison Transmission (key supplier to Freightliner) will play a key role in powertrain optimization, providing a hybrid-integrated transmission controller, advanced shift and transmission technologies and final shift schedule development, helping to maximize fuel reduction. NREL will provide duty-cycle analysis, fuel savings simulation and baseline, and final vehicle dynamometer testing.

ORNL will provide a lead role in powertrain simulation, optimization and test. Odyne has worked with major battery suppliers and has chosen AVL as the energy storage design and integration partner. AVL will utilize LG Chem cells manufactured in Michigan, leveraging the high volume production of this technology in the light-duty sector (e.g., Chevy Bolt and Volt).

Benefits to SCAQMD

The work-truck segment targeted by Odyne is almost exclusively made up of medium- and heavy-duty vehicles. This vehicle weight group is responsible for creating a disproportionate amount of emissions in the South Coast Air Basin, since they represent a relatively small percentage of the vehicle population yet are responsible for the majority of the NOx and particulate matter emissions. This project provides an opportunity to significantly reduce NOx and particulate matter emissions through the introduction of a relatively small number of cleaner transportation technologies. The hybridization and electrification of vehicles in this segment provides one such opportunity to reduce emissions. Additionally, eliminating the need for idling, especially in residential communities, minimizes localized exposure and noise issues.

Advancement of hybrid vehicle technologies is included in the *Technology Advancement Office Clean Fuels Program 2017 Plan Update* under the core category of "Electric/Hybrid Technologies & Infrastructure." The hybridization of transportation technologies has the potential to lower criteria pollutant emissions and reduce greenhouse gas emissions. This can provide substantial air quality benefits to communities, neighborhoods and schools where these vehicles operate.

Resource Impacts

The total cost for the project is $6,955,281, with SCAQMD's proposed cost-share not to exceed $900,000 from the Clean Fuels Fund (31). The project funding sources are identified below.

Project Partners	Funding Amount	Percent
DOE	$2,932,193	42
Odyne Systems, LLC	$1,033,088	15
Freightliner	$65,000	1
Allison Transmission	$25,000	1
Sempra Energy (in-kind)	$1,000,000	14
Duke Energy (in-kind)	$1,000,000	14
SCAQMD (*requested*)	$900,000	13
Total	**$6,955,281**	**100**

Sufficient funds are available in the Clean Fuels Fund (31) for this proposed project. The Clean Fuels Fund (31) is established as a special revenue fund resulting from the state-mandated Cleans 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.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 6

PROPOSAL: Transfer Funds, Execute Contract to Develop and Demonstrate Vessel Performance Management Software and Equipment, and Amend Award

SYNOPSIS: The California State University Maritime Academy proposes to demonstrate a technology capable of harvesting high altitude wind energy while employing a vessel performance optimization system. The first two phases of the project includes the design and installation of the performance management software and equipment followed by demonstration of the equipment with performance evaluation of its fuel and emissions reductions capabilities. Staff proposes to cost-share phase 2 of this project with the California State University Maritime Academy, Maritime Administration and Bay Area AQMD. These actions are to transfer $50,086 from the BP ARCO Settlement Projects Fund (46) into the Clean Fuels Fund (31), and execute a contract with the California State University Maritime Academy for the design and demonstration of vessel performance management software and equipment in an amount not to exceed $50,086 from the Clean Fuels Fund (31). Finally, this action is to amend a contractor's name from Ricardo Solutions to Ricardo, Inc., for a prior award.

COMMITTEE: Technology, February 17, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Transfer $50,086 from the BP ARCO Settlement Projects Fund (46) to the Clean Fuels Fund (31);
2. Authorize the Chairman to execute a contract with the California State University Maritime Academy for the design and demonstration of vessel performance management software and equipment in an amount not to exceed $50,086 from the Clean Fuels Fund (31); and

3. Amend a contractor's name from Ricardo Solutions to Ricardo, Inc., for a previous award for technical assistance for an unchanged amount of $50,000 from the Clean Fuels Fund (31).

Wayne Nastri
Executive Officer

MMM:FM:NB

Background

Ocean going vessels (OGVs) are very large vessels designed for deep water navigation. OGVs include large cargo vessels such as container vessels, tankers and bulk and car carriers, as well as passenger cruise vessels. These vessels transport containerized cargo including bulk items such as vehicles, cement and coke, liquids such as oil and petrochemicals, and passengers. OGVs travel internationally and may be registered by the U.S. Coast Guard (U.S.-flagged) or under the flag of another country (foreign-flagged). The majority of vessels that visit California ports are foreign-flagged vessels.

The Ports of Los Angeles and Long Beach (San Pedro Bay Ports) have jointly developed the San Pedro Bay Ports Clean Air Action Plan (CAAP), designed to reduce the emissions from a variety of port sources, including OGVs. The Plan encourages use of cleaner technology and practices in advance of regulations. Additional technologies and innovations are necessary to further enhance efficiencies and reduce emissions. This goal is consistent with CARB's Mobile Source Strategy as well as the Draft 2016 Air Quality Management Plan.

Proposal

The California State University Maritime Academy (Cal Maritime) is uniquely positioned to help maritime innovators and entrepreneurs test the technical merits, feasibility and scalability of their ideas. One such project is the SkySails project, which is being conducted in collaboration with research partners--the Adept Group, Inc., in Los Angeles, the College of Engineering/Center for Environmental Research and Technology (CE-CERT) at the University of California Riverside, and the Federal Maritime Administration (MARAD). The SkySails project seeks to validate the harvesting of high altitude wind energy (through the installation of a kite propulsion system and a vessel performance optimizing system on the Cal Maritime training ship) to provide supplemental green power to commercial shipping, as well as to objectively determine the extent such systems can lower criteria pollutants emissions, CO2 releases and fuel consumption.

The proposed project includes a science-based and peer-reviewed protocol to test, monitor, analyze and report the project's findings. Commercial vessels travelling regularly through Northern California waters have been approached to partner in this project. The overall project has the following four phases:

1. Plan for Capturing Baseline Indicators (1st year Cruise - Summer 2016) - Completed
   Preliminary efforts included upgrades to the vessels fuel consumption metering and exhaust gas flow sensors to back up the emissions profiling. This emissions profiling was conducted by CE-CERT, establishing a baseline for GHGs and other constituents, including particulates associated with diesel engine exhaust. All future projects involving exhaust gas emissions and fuel efficiency will utilize these measurements and metrics to gauge effects.

2. The Vessel Performance Manager (V-PER) (2nd Year Cruise – Summer 2017)
   The installation of this system is designed to enable smarter decisions while at sea, by providing real-time data point-related fuel consumption, engine performance along with external information, such as weather, to optimize ship speed, route plan, trim and energy management.

3. The Kite Phase (3rd year Cruise – Summer 2018)
   The SkySail kite will be installed, with a need to re-engineer the bulkheads of the ship to accept the stress that will be placed on them by the kite. This will require the selection of an engineering firm to reconfigure the ship.

4. The Analysis and Dissemination Phase (Fall 2018– Winter 2019)
   Upon completion of the testing, results will be reported to project partners and Cal Maritime industry leaders. Both publications and presentations will be used to disseminate the findings.

The goals for this project are as follows:

1. Demonstrate and quantify lower fuel use by the Training Ship Golden Bear (TSGB) on its summer cruises.
2. Help to improve air quality in coastal communities.
3. Encourage the development and growth of the environmental sustainability industry.
4. Inspire the development of future maritime and port leaders as better stewards of the environment, and
5. Deliver final reports including publishable papers and presentations to key stakeholders.

These actions are to transfer $50,086 from the BP ARCO Settlement Projects Fund (46) into the Clean Fuels Fund (31) and execute a contract with the California State University Maritime Academy for the design and demonstration of vessel performance management software and equipment in an amount not to exceed

$50,086 from the Clean Fuels Fund (31). The requested SCAQMD funds are to support Phase 2 of the project and further enable Phases 3 and 4 to further increase the emissions reduction potential.

Finally, at the June 3, 2016 meeting, the Board authorized the Chairman to execute a contract for technical assistance with Ricardo Solutions in an amount not to exceed $50,000 from the Clean Fuels Fund (31). In preparing the contract, it was determined that the contractor's name should have been listed as Ricardo, Inc. This action is to amend the contractor's name from Ricardo Solutions to Ricardo, Inc., in order to execute the contract.

Sole Source Justification
Section VIII.B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. This request for sole source award is made under provision B.2.d.: Other circumstances exist which in the determination of the Executive Officer require such waiver in the best interest of the SCAQMD. Specifically, these circumstances are B.2.d.(1): Project involving cost-sharing by multiple sponsors, including the Bay Area AQMD and MARAD to implement Phase 2 of the overall project.

Benefits to SCAQMD
The South Coast Air Basin is classified as an "extreme" nonattainment area for ozone under the federal Clean Air Act. A wide-scale deployment of low NOx technologies, including emissions from OGVs, is a critical step toward achieving the air quality standards with considerable public health benefits for our region. Locally, this project has the potential to lower NOx and diesel PM emissions and demonstrate potential pathways to increase efficiencies from OGVs.

Resource Impacts
SCAQMD's total cost-share for Phase 2 of the project with Cal Maritime will not exceed $50,086 using funds from the BP ARCO Settlement Projects Fund (46) transferred into the Clean Fuels Fund (31). Total project costs are $212,347. Project development costs for Phase 2 are as follows:

Project Development Costs

Funding Sources	Funding Amount		Total	Percent
	Cash	In-Kind		
Bay Area AQMD	$50,086	$16,432	$66,518	31%
MARAD	$79,311	$0	$79,311	38%
SCAQMD (*requested*)	$50,086	$16,432	$66,518	31%
Total	$179,483	$32,864	$212,347	100%

Sufficient funds are available from the BP ARCO Settlement Projects Fund (46). The Clean Fuels Fund (31) is established as a special revenue fund resulting from the state-mandated Cleans 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.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 7

PROPOSAL: Add Equipment and Add/Delete Positions to Address Operational Needs in Science and Technology Advancement for Metals Monitoring and Analysis

SYNOPSIS: The elevated levels of hexavalent chromium (Cr6+) that have recently been measured in the City of Paramount have created an urgent need to enhance SCAQMD's air quality monitoring and laboratory analysis capability. This action is to invest in new laboratory and field equipment and better align staffing resources to allow SCAQMD to appropriately address the increasing demand for extensive monitoring of Cr6+ and other toxic metals in the City of Paramount as well as other parts of the Basin.

COMMITTEE: Stationary Source, February 17, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Appropriate up to $35,325 from General Fund Undesignated (Unassigned) Fund Balance and transfer and appropriate up to $35,325 from the Air Toxics Fund (15) to the FY 2016-17 Budget, Capital Outlays Major Object, Capital Outlays Account, to reimburse the following offices for the purchase of an Ion Chromatograph:
   a. Up to $65,337 to District General; and
   b. Up to $5,313 to Information Management.
2. Transfer up to $240,000 from the Air Toxics Fund (15) to the General Fund in FYs 2016-17 and/or 2017-18 (any unused funds will be returned to the Air Toxics Fund) and appropriate up to $240,000 in Science and Technology Advancement's FYs 2016-17 and/or 2017-18 Budget (Org 44), as follows:
   a. Up to $170,000 into the Capital Outlays Major Object, Capital Outlays Account, in accordance with Tables 1A and 1B for laboratory equipment and software; and
   b. Up to $70,000 into Services and Supplies Major Object, Small Tools, Instruments, Equipment Account, for up to 20 integrated filter-based samplers, in accordance with Table 1B.

3. Recognize revenue, upon receipt, and appropriate up to $261,000 in U.S. EPA Section 105 funding as follows:
   a. Up to $131,000 into the Salaries and Employee Benefits Major Object, in accordance with Table 3, to fund three new positions;
   b. Up to $100,000 into the Capital Outlays Major Object, in accordance with Table 1A, to partially fund one Scanning Electron Microscope with Energy Dispersive Spectrometer; and
   c. Up to $30,000 into the Services and Supplies Major Object, Temporary Agency Services account, as needed, to supplement existing monitoring and analysis efforts.
4. Authorize the Procurement Manager, in accordance with SCAQMD Procurement Policy and Procedure, to:
   a. Issue solicitation(s) and purchase orders in an amount not to exceed $200,000 for laboratory equipment as listed in Table 1A; and
   b. Issue purchase orders in an amount not to exceed $140,000 for field equipment and software as listed in Table 1B.
5. Delete two Air Quality Instrument Specialist I positions and one Office Assistant position in Science and Technology Advancement (Atmospheric Measurements Branch-Federal Programs Group) as listed in Table 2.
6. Create and fill the following three new positions in Science and Technology Advancement to support current and future air monitoring and analysis activities in the City of Paramount and other parts of the Basin (Table 3):
   a. One Air Quality Instrument Specialist II in the Atmospheric Measurements Branch (Special Monitoring Group);
   b. One Air Quality Specialist in the Atmospheric Measurements Branch (Special Monitoring Group); and
   c. One Senior Chemist in Laboratory Services and Source Test Engineering.

Wayne Nastri
Executive Officer

MMM:JCL:AP:AK:ld

Background

In 2013, the SCAQMD received a series of metallic odor complaints from local community members in the Paramount neighborhood. In response to these complaints, SCAQMD staff conducted an investigation of potential local sources of emissions which included an air sampling study. The purpose of these activities was to determine the source of emissions and potential air pollution control strategies. Within the Paramount area, ambient monitoring of toxic metal emissions began in 2013 and has continued at two sites on Vermont Avenue and California Avenue.

Based on the monitoring results, there were two metals of concern: nickel and hexavalent chromium (Cr6+). In 2014 and 2015, SCAQMD worked with Carlton Forge Works to reduce metal particulate emissions from their grinding operation. Carlton Forge Works implemented a number of voluntary measures that substantially reduced nickel levels. Since these measures did not reduce ambient Cr6+ levels, the SCAQMD needed additional data to identify the source of these emissions. In October 2016, as part of its ongoing investigation to identify and address sources of Cr6+ that may be impacting the nearby communities, SCAQMD staff deployed several additional monitors in the mostly industrial areas of the City of Paramount. Since initial results showed elevated levels of Cr6+ near two metal processing facilities, stipulated Orders for Abatement were agreed upon by the Hearing Board, SCAQMD and Aerocraft Heat Treating Co. Inc. (December 2016) and Anaplex Corp. (January 2017) to reduce Cr6+ emissions from their operations. Since then, SCAQMD has been expanding the monitoring and analysis activities to encompass a larger portion of Paramount and identify other industrial facilities that may be responsible for the elevated levels of Cr6+ and other toxic metals in this area. As a result of this investigation, the SCAQMD is now proposing a new rule to control metal emissions from operations that forge, grind, finish and treat metal, as well as to minimize their impacts into surrounding communities. Because of the increasing demand for more extensive and ongoing monitoring of Cr6+ and other toxic metals in the City of Paramount and other parts of the Basin, staff has identified an urgent need for Science and Technology Advancement to expand its monitoring and analysis capabilities and proposes adjusting staff resources.

Proposal

These actions are to appropriate up to $35,325 from the General Fund Undesignated (Unassigned) Fund Balance and transfer and appropriate up to $35,325 from the Air Toxics Fund (15) to the FY 2016-17 Budget to reimburse the purchase of one Ion Chromatograph in Capital Outlays. Additionally, these actions are to transfer up to $240,000 from the Air Toxics Fund (15) into the General Fund in FYs 2016-17 and/or 2017-18, recognize upon receipt $261,000 in revenue from the U.S. EPA Section 105 grant, and appropriate up to $501,000 to Science and Technology Advancement's FYs 2016-17 and/or FY 2017-18 to issue solicitations and purchase orders for laboratory and field equipment as well as software, to provide funding for supplementing existing temporary services, and to delete three vacant positions and add three new positions in Science and Technology Advancement, as described herein and below, and summarized in the attached tables.

Purchase of an Ion Chromatograph

The large number of Cr6+ samples being collected in Paramount exceeded the throughput capacity of the two existing Ion Chromatographs (IC) in the SCAQMD laboratory. These instruments are also being used to analyze samples for other special monitoring projects and the U.S. EPA National Air Toxics Trends Stations (NATTS)

Program. Due to the increased sample analysis demands along with a recent breakdown of an existing IC, it was critical to acquire an additional IC instrument to provide adequate coverage for present and future Cr6+ analysis measurements. The IC was purchased in December 2016 as an urgent need to protect public health as allowed in the SCAQMD Procurement Policies and Procedures; District General and Information Management funds were used to complete the purchase. This action is to appropriate up to $70,650 to the FY 2016-17 Budget, Capital Outlays Major Object, to reimburse offices for the purchase of an IC as follows: up to $65,337 to District General and up to $5,313 to Information Management.

Proposed Purchases through Solicitation Process

Scanning Electron Microscope with Energy Dispersive Spectrometer (SEM-EDS)
The SCAQMD uses optical microscopes to analyze metal containing particles collected on deposition plates and identify potential sources of Cr6+ and other air toxic pollutants. This technique does not provide high throughput screening of samples, easy identification of particle composition, or quantification of particle sizes. Scanning SEM-EDS provides high resolution images of particle samples to identify their size, composition and metals content. As special monitoring studies continue in the City of Paramount and expand into other areas of the Basin, this instrument will help the SCAQMD laboratory more quickly identify potential sources of air toxic metals and asbestos. The Procurement Manager will release the appropriate type of solicitation to solicit formal bids, in accordance with SCAQMD's Procurement Policy and Procedure. Based on the results of the formal bid, a purchase order will be issued to purchase a SEM-EDS in an amount not to exceed $200,000 for which $100,000 will be funded by U.S. EPA (Table 1A).

Proposed Purchases through Sole Source Purchase Orders

Integrated Filter-Based Samplers
Staff currently operates enough integrated samplers to support the collection of particulate samples for various high profile projects such as Hixson, TAMCO and Paramount. Recently, field activities have expanded to encompass a larger portion of Paramount and provide more comprehensive and ongoing monitoring of the industrial facilities that may be responsible for the elevated levels of Cr6+ and other air toxic metals in this area. The current supply of samplers is becoming old, and many of these units are no longer supported by the manufacturer. Therefore, additional samplers are needed to keep pace with the increasing demand for more extensive metal monitoring in the City of Paramount and in other parts of the Basin. The Procurement Manager will issue a purchase order not to exceed $70,000 for up to 20 integrated filter-based samplers (Table 1B).

Portable Wind System
The correct interpretation of the air monitoring data from the Paramount project is dependent upon the availability of accurate wind and weather information. Currently, wind speed and direction are only available at the air monitoring station located in Compton, about two miles west of the City of Paramount. Therefore, staff has recommended the purchase of portable and easily deployable wind systems to collect more representative local weather data. The portable wind system is needed to help expand the monitoring capabilities within Paramount and other potential sites for the monitoring of toxic metals. The Procurement Manager will issue a purchase order not to exceed $20,000 for up to three portable wind systems (Table 1B).

Chromeleon Software for Ion Chromatographs
Staff utilizes the Chromeleon software package on numerous pieces of scientific instrumentation to determine the metal content (including Cr6+) of samples collected for the Paramount saturation study and other air monitoring projects. The software operates an instrument that is responsible for over 600 sample analyses per month, most of which require reporting within two days of receipt. The current version of this software is outdated and no longer supported by the manufacturer. Purchasing the latest "enterprise" version of Chromeleon allows for real-time backup of all instrument data (thus ensuring zero data loss) and for remote access to the IC instrument for verification of ongoing analyses from off-site locations and standardize the software running these instruments. The Procurement Manager will issue a purchase order not to exceed $50,000 for one Chromeleon Software for ICs (Table 1B).

Proposed Staffing Adjustments

Two Air Quality Instrument Specialist I positions and one Office Assistant Position in Federal Programs Group
The Federal Enhanced Particulate Monitoring Program operates a core air monitoring network on an ongoing basis. The two Air Quality Instrument Specialist I and Office Assistant positions were added for handling special programs and a potential expansion to the network. Since the Enhanced Particulate Network has not expanded and the work load is being handled appropriately with current resources, staff recommends the deletion of these three positions.

Air Quality Instrument Specialist II in Atmospheric Measurements
Special monitoring efforts have expanded to respond to community concerns, compliance requests and rules support. These recent and current deployments have better characterized emissions from oil reclamation activities, metal finishing, metal forging and recycling, battery recycling facilities, transfer stations, alternative burning technologies, asbestos sources and natural gas leaks. Also, with recent enhancement to include more real-time monitoring capabilities, the amount of data processing has increased significantly. Therefore, it is necessary to add one additional Air Quality

Instrument Specialist II position within Atmospheric Measurements (Special Monitoring Group) to assist with the expanded air monitoring deployments, method development and documentation, and data analysis, interpretation and visualization related to current and ongoing metals air toxics measurements.

Air Quality Specialist in Atmospheric Measurements
During the past few years, the amount of air monitoring data produced by Atmospheric Measurements (Special Monitoring Group) has grown substantially, both in number and complexity. Special monitoring projects, including those in Aliso Canyon and Paramount, require the use of state-of-the-art air monitoring and analysis equipment that often produces real (or near-real) time information such as the near real-time multi-metals system. To efficiently address the expanding ambient monitoring data management requirements for metals measurements and to improve the efficiency with which air quality data are collected, analyzed, validated and reported, comprehensive new analysis and visualization tools and other management systems will need to be implemented. Therefore, there is an urgent need to hire one additional dedicated Air Quality Specialist within the Special Monitoring Group to ensure the successful development, operation and evolution of the near real-time multi-metals instrument and associated data systems, as well as to identify available hardware, software and web- or cloud-based solutions for validating, analyzing, interpreting and mapping air quality data.

Senior Chemist in Laboratory Services and Source Test Engineering
Laboratory Services conducts multiple types of analysis that require strict quality assurance and quality control practices be followed. Additionally, the samples the laboratory receives must be tracked with chain of custody forms to ensure samples have been transported, stored and handled properly prior to being analyzed. The data produced by the laboratory needs to be thoroughly reviewed and validated before it can be shared with upper management, other agencies and the public. Furthermore, the laboratory must also follow strong safety protocols and ensure proper safety training happens on a recurring basis. Because of the additional workload generated by the increasing number of air samples analyzed within the Paramount Project and for other special monitoring studies, there is an immediate need to add one additional Senior Chemist position to Laboratory Services to better coordinate the validation, review and analysis of the collected data.

Sole Source Justification
Section VIII, B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified for procurement. The request for sole source purchase of the Integrated Filter-Based Samplers and the Portable Wind System is made under Sections B.2.b and B.2.c of the Procurement Policy and Procedure. Delay of the purchases for the integrated filter-based samplers and portable wind system may endanger public health or property and the systems

utilize proprietary technology. The request for sole source purchase of the Chromeleon Software for Ion Chromatographs is also made under Section B.2.c; the software uses proprietary technology that is only capable with the current laboratory instruments.

Benefits to SCAQMD

The purchase of new laboratory and field equipment and software, as well as the reallocation of staff resources in the Monitoring and Analysis Division within Science and Technology Advancement will allow SCAQMD to appropriately address the increasing demand for more extensive monitoring of ambient Cr6+ and other toxic metals in the City of Paramount and in other parts of the Basin as well as greatly enhance the capability of the Monitoring and Analysis Division to respond quickly to current and future air monitoring requests.

Resource Impacts

The General Fund Undesignated (Unassigned) Fund Balance and the Air Toxics Fund (15) will be used to reimburse offices for the capital outlay purchase in an amount up to $70,650. The Air Toxics Fund (15) and U.S. EPA Section 105 funding will be used to fund the proposed purchases listed in Tables 1A and 1B, temporary services, and the addition of the three new positions outlined in Table 3. Salaries and benefits for the proposed positions will be in accordance with the Board-approved job classifications, and the annual cost of the proposed positions at Step 5 is approximately $461,000. The proposed deletion of three positions as shown in Table 2 will result in an annual cost reduction of $283,652. The purchases in Tables 1A and 1B will not exceed $340,000 of which $240,000 is funded by the Air Toxics Fund (15). Any unused funds will be returned to the Air Toxics Fund (15).

Attachments

Table 1A – Proposed Purchases through Competitive Solicitation Process
Table 1B - Proposed Purchases through Sole Source Purchase Orders
Table 2 - Proposed Staffing Deletions
Table 3 – Proposed Staffing Additions

Table 1A
Proposed Purchases through Competitive Solicitation Process

Description	Qty	Estimated Cost
Scanning Electron Microscope with Energy Dispersive Spectrometer (SEM-EDS)	1	$200,000*
Total		**$200,000**

*$100,000 is funded from the Air Toxics Fund (15) and $100,000 is funded by U.S. EPA

Table 1B
Proposed Purchases through Sole Source Purchase Orders

Description	Qty	Estimated Cost
Integrated filter-based samplers	Up to 20 units	$ 70,000
Portable wind system	Up to 3 units	$ 20,000
Chromeleon Software for Ion Chromatographs	1	$ 50,000
Total		**$140,000**

Table 2
Proposed Staffing Deletions

Title	Qty	Division	Estimated Cost*
Air Quality Instrument Specialist I	2	Atmospheric Measurements (Federal Programs Group)	$210,740
Office Assistant	1	Atmospheric Measurements (Federal Programs Group)	$ 72,912
Total Proposed Staffing Deletions	3		**$283,652**

*Salaries & Employee Benefits at Step 1 include base salary, retirement cost, insurance, FICA & SDI for a period of 12 months.

Table 3
Proposed Staffing Additions

Title	Qty	Division	Estimated Cost*
Air Quality Instrument Specialist II	1	Atmospheric Measurements (Special Monitoring Group)	$37,000
Air Quality Specialist	1	Atmospheric Measurements (Special Monitoring Group)	$46,000
Senior Chemist	1	Laboratory Services and Source Test Engineering	$48,000
Total Proposed Staffing Additions	3		**$131,000**

*Salaries & Employee Benefits at Step 3 include base salary, retirement cost, insurance, FICA & SDI for a period of four months to reflect available U.S. EPA funding.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 8

PROPOSAL: Create Special Revenue Fund, Recognize and Transfer Funds, Execute Agreement for SCAQMD to Act as Supplemental Environmental Project Implementer for Installation of Air Filtration Systems, Execute Contract and Reimburse General Fund for Administrative Costs

SYNOPSIS: CARB and the Burlington Northern Santa Fe Railway Company (BNSF) are executing a Supplemental Environmental Project (SEP) agreement to install air filtration systems at school(s) in a local Environmental Justice community. Both parties have requested SCAQMD act as the SEP Implementer. These actions are to: 1) create the Air Filtration Fund (75); 2) recognize up to $625,000 from BNSF into the Air Filtration Fund (75); and 3) transfer up to $625,000 as a temporary loan from the Clean Fuels Fund (31) to the Air Filtration Fund (75). Furthermore, these actions are to execute an agreement with BNSF for SCAQMD to act as the SEP Implementer for this project, execute a contract with IQAir North America for installation of air filtration systems in an amount not to exceed $593,750 and reimburse the General Fund for administrative costs up to $31,250 from the Air Filtration Fund (75).

COMMITTEE: Technology, February 17, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Create the Air Filtration Fund (75);
2. Recognize, upon receipt, up to $625,000 from BNSF into the Air Filtration Fund (75);
3. Transfer up to $625,000 as a temporary loan from the Clean Fuels Fund (31) into the Air Filtration Fund (75);
4. Authorize the Executive Officer to execute an agreement with BNSF for SCAQMD to act as the SEP Implementer for installation of air filtration systems;
5. Authorize the Chairman to execute a contract with IQAir North America for installation of air filtration systems at one or more schools in an amount not to exceed $593,750 from the Air Filtration Fund (75); and

6. Reimburse the General Fund from the Air Filtration Fund (75) for administrative costs up to $31,250 as needed to implement the air filtration project.

Wayne Nastri
Executive Officer

MMM:FM:NB:PSK

Background

CARB and the Burlington Northern Santa Fe Railway Company (BNSF) are executing a Supplemental Environmental Project (SEP) agreement to install air filtration systems at one or more schools in an Environmental Justice community in the South Coast region. Both parties have requested SCAQMD act as the SEP Implementer for this project, which must be completed by January 2019.

IQAir North America was previously selected through two separate competitive bid processes in 2011 and 2013 for the TraPac and AB 1318 air filtration projects, respectively. They were also the only qualified manufacturer of high performance filters and stand-alone units to meet the performance standards in SCAQMD's 2009 air filtration pilot study as well as through a national testing opportunity conducted by the University of California Riverside/College of Engineering-Center for Environmental Research & Technology at Sunnyslope Elementary School in 2010. To date, through its contractor IQAir, SCAQMD has installed air filtration systems at 71 schools and community centers. Performance standards from SCAQMD's air filtration pilot study include an overall removal efficiency of at least 85 percent for ultrafine PM and black carbon, low pressure drop for panel filters, no ozone generation and a noise level below 45 decibels for stand-alone units.

Proposal

CARB staff have requested that selected schools receiving air filtration systems be in Environmental Justice communities close to intermodal rail facilities or other sources of diesel PM as well as project completion by January 2019. Staff will also utilize an existing Memorandum of Agreement (MOA) with the Los Angeles Unified School District, providing access to any schools in that district, as well as execute any necessary MOAs with other school districts to provide site access to schools.

The proposed schedule for installation of air filtration systems in one or more schools in Environmental Justice communities is as follows:

Date	Event
March 2017	Board Approval
March 2017	Anticipated Contract Award
March-April 2017	Selection of School(s), Site Assessments
April-September 2017	Installation
September 2017	Final Report

These actions are to create the Air Filtration Fund (75); recognize up to $625,000 from BNSF into the Air Filtration Fund (75); and transfer up to $625,000 as a temporary loan from the Clean Fuels Fund (31) to the Air Filtration Fund (75).

Finally, these actions are to also execute an agreement with BNSF for SCAQMD to act as the SEP Implementer for this project and execute a contract with IQAir North America for installation of air filtration systems as well as reimburse administrative costs.

Sole Source Justification
Section VIII. B. 2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. This request for a sole source award is made under provision B.2.c(1): The desired services are available from only the sole-source based upon the unique experience and capabilities of the proposed contractor or contractor team. IQAir is the only manufacturer of high performance panel filters and stand-alone units identified by SCAQMD and CARB Research Division staff that meet the performance standards in SCAQMD's 2009 air filtration pilot study. Staff has also consulted with CARB Research Division staff to confirm that no new manufacturers of air filtration technologies that meet or exceed the performance standards in the pilot study have been identified since the last RFP process in 2013.

Benefits to SCAQMD
This project will reduce children's exposure to criteria and toxic pollutants and ultrafine PM. Health studies have determined that fine and ultrafine PM, including diesel PM, present the greatest air pollution health risk to sensitive receptors in Environmental Justice communities in Southern California.

Resource Impacts
Upon receipt, up to $625,000 from the SEP revenue will be recognized into the Air Filtration Fund (75). Until receipt, up to $625,000 from the Clean Fuels Fund (31) will be used as a temporary loan. Of the $625,000 SEP revenue, the contract with IQAir North America to install air filtration systems will not exceed $593,750 and reimbursement of administrative costs will not exceed $31,250.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 9

PROPOSAL: Execute Contract for Information Technology Review

SYNOPSIS: On December 2, 2016, the Board approved release of an RFP for an information technology review. This action is to execute a contract with Sunera LLC to obtain these technology review services. Funds for these services ($75,000) are included in the FY 2016-17 Budget.

COMMITTEE: Administrative, February 10, 2017; Recommended for Approval

RECOMMENDED ACTION:
Authorize the Chairman to execute a contract with Sunera LLC for performance of an information technology review for FY 2016-2017 at a total cost not to exceed $75,000.

Wayne Nastri
Executive Officer

JCM:OSM:jga

Background
On December 2, 2016, the Board authorized release of RFP #2017-09 for an information technology (IT) review. The requested services consist of an evaluation of the information technologies currently in place and those that are needed to support SCAQMD's future business goals and objectives. An information technology review is an examination of information systems (hardware and software) within an IT infrastructure. During the information technology review, the consultant will collect and evaluate evidence of SCAQMD's information systems, practices and operations to determine if changes are needed in the existing structure to meet current and future needs.

Outreach
In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids was 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 were notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP was 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).

Bid Evaluation
The SCAQMD received a total of four proposals from firms that are qualified to perform information technology reviews in the State of California. All of the proposals were received by the 1:00 p.m., January 10, 2017 deadline and were evaluated by a technically qualified panel in accordance with criteria contained in the RFP.

Of the four proposals received, two were rated technically qualified to perform the information technology review and were scored for cost. Two of the proposals failed to receive the minimum technical score and received no further evaluation. Evaluation results for the two qualifying proposals are summarized below.

BIDDER	TECHNICAL SCORE	BID AMOUNT	COST	TOTAL POINTS	OVERALL RANK
Sunera LLC	66.0	$74,800	30.0	96.0	1
Varsun eTechnologies	60.8	$74,400	29.5	90.3	2

Panel Composition
The panel convened to evaluate the proposals consisted of the following SCAQMD staff members: the Assistant Deputy Executive Officer of Compliance and Enforcement, the Assistant Deputy Executive Officer of Engineering and Permitting, the Financial Services Manager and two (2) Technology Implementation Managers from Information Management. Of the five panelists that scored the proposals, one is African American and four are Caucasian; three female and two male.

Resource Impacts
The maximum cost for the information technology review is $75,000. Sufficient funding is included in the FY 2016-17 Budget.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 11

PROPOSAL: Execute Administrative Service Agreement with Los Angeles County Employees Retirement Association to Continue to Administer Healthcare and Death Benefits for SCAQMD Retirees Participating in Los Angeles County Employees Retirement Association

SYNOPSIS: Los Angeles County Employees Retirement Association (LACERA) currently administers healthcare and death benefits for 63 retirees and beneficiaries who participated in LACERA while being employed by SCAQMD. LACERA is seeking to execute a new agreement to formalize the administration of these benefits.

COMMITTEE: Administrative, February 10, 2017; Recommended for approval.

RECOMMENDED ACTION:
Authorize the Executive Officer to execute an Administrative Service Agreement with LACERA to continue to provide health care and death benefits to eligible SCAQMD employees.

Wayne Nastri
Executive Officer

MBO:SJ:tam

Background

Employees who became employed by SCAQMD after December 31, 1978, were required to join SBCERA and no longer had an option to join LACERA. Existing employees were allowed to continue membership in LACERA and were not required to switch to SBCERA. These employees who elected to continue membership did so, at least partly, because LACERA offered a health care and death benefit that would not be provided through SBCERA. LACERA paid these benefits from "excess earnings" until June 30, 1982. At that time, LACERA required these benefits to be paid by the participating employers. On July 9, 1982, the SCAQMD Governing Board adopted a resolution to reimburse LACERA for the cost of these benefits.

There are currently 63 SCAQMD retirees and beneficiaries receiving these benefits at the cost of approximately $20,000 per month ($317 per retirement benefit), or $240,000 annually. Additionally, there is one active remaining SCAQMD employee with participation in LACERA who will receive these benefits upon retirement. The number of employees and beneficiaries will continue to decrease over time.

Proposal

Staff is requesting Board approval to execute an Administrative Services Agreement with LACERA to formalize the responsibility of LACERA and SCAQMD in the administration of these benefits.

Resource Impacts

The current cost of health care and death benefits for SCAQMD employees with LACERA membership is $240,000 annually and is included in the current general fund budget and additional funding will be requested in future budgets.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 10

PROPOSAL: Amend Contracts to Provide Short- and Long-Term Systems Development, Maintenance and Support Services

SYNOPSIS: SCAQMD currently has contracts with several companies for short- and long-term systems development, maintenance and support services. These contracts are periodically amended as additional needs are defined. This action is to amend the contracts approved by the Board to add additional funding for needed development and maintenance work.

COMMITTEE: Administrative, February 10, 2017, Recommended for Approval

RECOMMENDED ACTION:
Authorize the Executive Officer to execute amendments to the contracts for systems development services in the amount of $242,000 to AgreeYa Solutions and $163,000 to Sierra Cybernetics from the FY 2016-17 budget for the specific task orders listed in the Attachment.

Wayne Nastri
Executive Officer

JCM:OSM:jga

Background
At its October 3, 2014 meeting, the Board authorized staff to initiate level-of-effort contracts with several vendors for systems development, maintenance and support services. At the time these contracts were executed, it was expected that they would be modified in the future to add funding from approved budgets as system development requirements were identified and sufficiently defined so that task orders could be prepared.

System development and maintenance efforts are currently needed (see Attachment) to enhance system functionality and to provide SCAQMD staff with additional automation for improving productivity. The estimated cost to complete the work on these additional tasks exceeds the amount of funding in the existing contracts.

The contracts are for one year with the option to renew for two one-year periods. We currently have contracts in place with both AgreeYa Solutions and Sierra Cybernetics.

These items are listed on the "Status Report on Major Ongoing and Upcoming Projects for Information Management."

Proposal
Staff proposes the contracts be amended in the amount of $242,000 to AgreeYa Solutions, and $163,000 to Sierra Cybernetics for the specific task orders listed in the Attachment.

Resource Impacts
Sufficient funding is included in the FY 2016-17 Budget.

Attachment
Task Order Summary

Attachment

Task Order Summary

Section A – Funding Totals by Contract

CONTRACTOR	PREVIOUS FUNDING	THIS ADDITION	TOTAL FUNDING
AgreeYa Solutions	$277,340	$242,000	$519,340
Prelude Systems	$571,500	$0	$571,500
Sierra Cybernetics	$992,500	$163,000	$1,155,500
Varsun eTechnologies	$1,268,550	$0	$1,268,550
TOTAL	$3,109,890	$405,000	$3,514,890

Section B – Task Orders Scheduled for Award

TASK	DESCRIPTION	ESTIMATE	AWARDTO
Emission Reporting System Replacement	Upgrade and replacement of the outdated emissions reporting system used for daily reporting of NOx and SOx emissions from Major Source facilities and the associated web applications used for search, retrieval and viewing of the reported emissions information	$242,000	AgreeYa
CLASS Systems and Web Application Maintenance and Support	Minor enhancements, maintenance and support for the SCAQMD suite of CLASS Systems, Web Applications, Web Services, and Web Application Program Interfaces (API's)	$103,000	Sierra
Air Quality Index (AQI) Conversion and Migration from FORTRAN to DMS	Conversion of the Air Quality Index (AQI) calculation to a Web Service/Web API and migration from the existing Data Acquisition System (FORTRAN) to STA's Data Management System (DMS)	$60,000	Sierra
TOTAL		$405,000	

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 12

PROPOSAL: Approve SCAQMD Annual Investment Policy and Delegation of Authority to Appointed Treasurer to Invest SCAQMD Funds

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.

COMMITTEE: Investment Oversight, February 17, 2017; Recommended for Approval

RECOMMENDED ACTIONS:
1. Approve the attached Annual Investment Policy, and
2. Approve the attached resolution to renew delegation of authority to the Los Angeles County Treasurer to invest and reinvest SCAQMD funds.

Wayne Nastri
Executive Officer

MBO:lg

Background

Changes to the California 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 (Government 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 SCAQMD. This change required the development of an annual statement of investment policy specific for SCAQMD.

SCAQMD's investment consultant, working with staff of 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 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.

Proposal

The Investment Policy was substantially revised in 2013, including updating credit requirements, revising maturity limits, and clarifying diversification guidelines. Minor updates have been made since that time to ensure compliance with changes to the California Government Code. There are two revisions being recommended for the Investment Policy, including: 1) a minor change to California Government Code Section 53601 that describes authorized investment rating requirements by referring to a rating category which is inclusive of any rating modifiers such as "+"/"–"; and 2) a change in title of the Chief Financial Officer to the Chief Administrative Officer within the Investment Policy to match recent organizational changes.

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 the Los Angeles County Treasurer.

Resource Impacts

Costs associated with SCAQMD treasury management operations are included in the FY 2016-17 Budget and will be included in the FY 2017-18 Budget.

Attachments

1. SCAQMD Annual Investment Policy
2. Resolution - Delegation of Authority to Appoint L.A. County 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~~Chief Administrative Officer. The ~~Chief Financial Officer~~Chief Administrative 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~~Chief Administrative Officer is responsible for preparation of cash flow forecasts for SCAQMD funds as described below. The ~~Chief Financial Officer~~Chief Administrative 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~~Chief Administrative 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~~Chief Administrative Officer as appropriate.

3. Provide comments to the SCAQMD ~~Chief Financial Officer~~Chief Administrative 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~~Chief Administrative Officer determines that the cash flow forecast can be met, the Treasurer, at the request of the ~~Chief Financial Officer~~Chief Administrative 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~~in a rating category of "A" or its equivalent, or higher, 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 in a rating category of "A", or the equivalent, 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 in a rating category of "A-1", or the equivalent, or higher, 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~~higher 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 rating in the category of "AA", or its equivalent, or higher~~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 in a rating category of~~at least~~ "A", or its equivalent, or higher, by a NRSRO.

15. Obligations of Supranational Institutions

    Permitted obligations will include U.S. dollar denominated senior unsecured unsubordinated obligations issued or unconditionally guaranteed by any of the supranational institutions identified in California Government Code Section 53601(q), which are eligible for purchase and sale within the U.S.

    Obligations of supranational institutions must be rated ~~at least~~in a rating category of "AA", or its equivalent, or higher, 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.

	Instrument	*Maximum % of Portfolio*
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%
15.	Obligations of Supranational Institutions	10%

* See Section V(E)(12).

Issuer/Counterparty	*Maximum % of Portfolio*
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 in a rating category of "AA", or its equivalent, or ~~better~~higher, 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 in a rating category of "A", or its equivalent, or ~~better~~higher 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~~Chief Administrative 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~~Chief Administrative 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~~Chief Administrative 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 3~~4~~, 201~~6~~7

RESOLUTION NO. 17-____

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 Boards

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 13

PROPOSAL: Annual Meeting of the Brain & Lung Tumor and Air Pollution Foundation

SYNOPSIS: This item is to conduct the annual meeting of the Brain & Lung Tumor and Air Pollution Foundation. The Foundation staff will present an annual report detailing the research supported by the Foundation over the past year, the Foundation's plans for the future, and a financial report. In addition, the Foundation's Board of Directors recommends approval of the proposed amendments to the Foundation's Articles of Incorporation. The amendments will expand the type of research the Foundation can fund from brain and lung tumors to all health conditions that may be caused or aggravated by air pollution. The amendments will also change the Foundation's name to reflect the Foundation's broadened purpose.

COMMITTEE: No Committee Review

RECOMMENDED ACTIONS:
1. Receive and file the annual report and ratify the Foundation's disbursements described in the annual report.
2. Amend the Foundation's Articles of Incorporation to (1) expand the type of research the Foundation can fund to include all health conditions that may be caused or aggravated by air pollution and (2) change the Foundation's name to the Health Effects of Air Pollution Foundation.

Wayne Nastri
Executive Officer

KRW:ML

2017 Annual Report

1. Background

In February 2003, the Board established the Brain Tumor and Air Pollution Foundation. In March 2004 the Foundation amended its Articles of Incorporation to change its name to Brain & Lung Tumor and Air Pollution Foundation (Foundation) and to specify that

its purpose is related to the effects of air pollution on brain tumors and lung cancer. The mission of the Foundation is to support research studies on the association between air pollution and brain and lung tumors, as well as research for the development of novel therapeutics for such tumors. To date, the amount of funding received is $8,222,568. The current projects being funded by the Foundation are described in Section 3 below.

2. Directors and Officers

The Directors of the Foundation are: Ben Benoit, Vice Chairman
Dr. William A. Burke
Dr. Clark E. Parker, Sr.
Judith Mitchell

The Board of Directors will select a Chairperson at an upcoming Board of Directors meeting.

The Foundation's staff is: Wayne Nastri, Chief Executive Officer
Denise Whitcher, Secretary
Michael O'Kelly, Treasurer

3. Report on the Foundation's Activities

Recently Completed Research Projects

The following research projects concluded during the past 12 months:

"Chronic Exposure (1 Year) of Mice to Ambient Particles to Study Cancer-Related Stem Cell Activation in the Brain" (BTAP008)
Principal Investigator: Dr. Keith Black (Cedars-Sinai Medical Center)
Summary: This toxicological study investigated the effects of long-term exposure to PM on molecular changes in the brain, focusing on genes and proteins related to tumor development and neurodegenerative diseases. The study also analyzed human brain tumor tissues to identify proteins that may contribute to tumor growth. In the mouse study, the investigators found that long-term exposure to PM increased the expression of several genes associated with increased inflammation and immune response, which indicate possible injury to the brain. Tumor markers and markers of neurological disease were also overexpressed. The study also identified several changes in protein expression in the PM-exposed mice, compared to the mice breathing fresh air. The PM-exposed mice, and especially the mice exposed to ultrafine particles, expressed higher levels of proteins linked to inflammation, oxidative stress, protein degradation, and nitrogen oxide signaling. The PM-exposed mice also had lower levels of proteins linked to nerve cell growth and differentiation, tubulin synthesis, calcium metabolism and mitochondrial function. Based on the data on protein expression in mice, long-term exposure to PM was associated with changes that are linked to a number of neurodegenerative diseases and conditions, as well as brain tumor development (glioblastoma multiforme). In the study of human brain tumor tissues, the investigators

found increased expression of a specific protein (laminin) and its receptor integrin, as well as cancer stem cell markers, compared to non-tumor brain samples. These proteins play important roles in tumor growth and development, and inflammation in the brain can contribute to tumor growth by stimulating cancer stem cells.

"Childhood Brain Tumors and Air Pollution" (BTAP009)
Principal Investigator: Dr. Roberta McKean-Cowdin (University of Southern California)
Summary: This epidemiological study investigated the potential links between PM2.5 and NO2 exposures and childhood brain tumors among children living in Los Angeles, San Bernardino, Riverside and Orange Counties. The study used data from birth registries and two existing brain tumor studies (the West Coast Childhood Brain Tumor Study and the Southern California Childhood Brain Tumor Study). An air pollution exposure model was developed to estimate PM2.5 and NO2 exposures to each child from birth until diagnosis (for cancer cases) or reference age (for controls), and also for *in utero* exposures. Among the Los Angeles County children, the investigators found being exposed to high PM2.5 levels *in utero* or soon after birth was associated with a higher risk of being diagnosed with childhood brain tumors. Exposure to high levels of NO2 in early childhood was also associated with increased risk of childhood brain tumors. The study evaluated concurrent exposure to PM2.5 and NO2 and concluded that PM2.5 may serve as a better marker of regional traffic-related air pollution exposures in the Los Angeles area, while NO2 may be a better indicator of local traffic sources.

Current Research Projects
The following research projects were approved for funding by the Foundation Board in November 2016:

"A Cohort Study of Air Pollution, Malignant and Benign Brain Tumors in Los Angeles County" (BTAP010)
Principal Investigator: Dr. Anna Wu (University of Southern California)
Approved Funding: $758,978
Summary: The proposed study will leverage the Multiethnic Cohort (MEC) study to examine whether air pollution is associated with primary malignant and benign brain tumors. The investigators leverage previous air pollution exposure work and propose adding new components (e.g. ultra-fine particle exposure, air toxics) to comprehensively assess air pollution exposures in the MEC cohort. The study proposes to examine associations between traffic air pollution and malignant primary brain cancer and meningiomas (non-cancerous brain tumors).

"Role of particle-induced inflammation in progression of brain tumors and neurodegenerative brain diseases" (BTAP011)
Principal Investigator: Dr. Keith Black (Cedars-Sinai Medical Center)
Approved Funding: $733,461
Summary: The investigators propose to study whether exposure to ambient air pollution-derived particulate matter (PM) alters the progression of brain tumors in mice. The mice proposed to be used in the experiments have brain tumors initiated from human glioblastoma cell lines. The PM will be concentrated for experimental use from Irvine, CA ambient air. As part of this study, changes in tumor progression and inflammatory markers (measured by changes in gene expression) and stem cell activation will also be evaluated.

"Do Changes in Amount and Composition of Ambient PM Influence Induction or Exacerbation of Brain and Lung Tumors?" (BTAP012)
Principal Investigator: Dr. Arthur Cho (University of California, Los Angeles)
Approved Funding: $979,182
Summary: This study proposes to use cellular and mouse models to investigate whether exposure to air pollution (PM and vapor phase) increases the expression of biological markers that are associated with the development or progression of lung or brain cancers. The investigators propose to collect ambient air samples at several locations and in different seasons in the Los Angeles Air Basin. The samples will be characterized for their potential biological actions, and then used in studying the potential effects in human lung cancer cells and brain cancer cells. Biological markers relevant to cancer development or progression (oxidative stress, inflammation, tumor cell growth stimulators, and invasive behavior of cells) will be evaluated in these experiments. The air samples will also be used in an exposure study of mice induced with brain cancer cells, to monitor and quantify tumor growth. Additionally, the study will separate the PM from the air samples into "fractions" with different chemical properties, and these PM fractions will be tested for toxicity using human lung and brain cancer cells, using the same biological markers for inflammation and tumor cell growth.

4. Financial Report
The Foundation's fiscal year ended June 30, 2016. Financial statements were prepared by staff and audited by Simpson and Simpson, CPA (Auditor). Total expenses for the fiscal year were $1,369 and included audit fees ($1,209) and other fees/taxes ($160). The Auditor issued an unmodified opinion, indicating that the financial statements were presented fairly, in all material respects, and in accordance with generally accepted accounting principles.

As of January 31, 2017, the Foundation had a cash balance of $2,585,671. Following is an accounting of the Foundation's operations since its inception (7/23/03):

Revenue from Operations	
Contributions	$8,222,568
Interest Income	41,420
Total Revenue from Operations	$8,263,988

Operating Expenses	
Grants	
-Cedars-Sinai	$5,309,250
-USC	351,328
Corporation Filing Costs	1,550
Bank charges	589
Professional fees-audit	15,600
Total Operating Expenses	$5,678,317
Cash Balance	$2,585,671

5. Amendment of the Foundation's Articles of Incorporation

At the Foundation's Board of Directors meeting on February 10, 2017, the Board voted to amend the Foundation's Articles of Incorporation to expand the type of research the Foundation can fund. Currently, the Articles of Incorporation specify that the purpose of the Foundation is (i) to aid, assist, and support research on the incidence, detection and causes and cures of brain and lung tumors, especially those caused or aggravated by air pollution; and (ii) to receive and utilize funds acquired through the solicitation of donations, gifts, and bequests for the purposes for which the Foundation was formed. The amendments approved by the Board of Directors expand the Foundation's purpose from supporting brain and lung tumor research to supporting research of all health conditions that may be caused or aggravated by air pollution. In addition, the amendments change the Foundation's name to the "Health Effects of Air Pollution Foundation" to reflect the Foundation's broadened purpose. It is proposed that the Governing Board approve the proposed amendments. If approved by the Governing Board, a certificate of amendment will be filed with the Secretary of State.

6. Plans for the Upcoming Year

The Foundation will continue monitoring the progress of the existing research projects.

In July 2015, the Foundation Board authorized the release of RFP# BLTAPF-1 to solicit research proposals related to the incidence, detection, and causes and cures of brain and lung tumors that are caused or aggravated by air pollution. In November 2016, the Foundation Board authorized funding for the three proposals noted above. The contract awarded to Cedars-Sinai funds a study of the effects of air pollution on brain tumors ($733,461 for a 1-year study). The proposal from Cedars-Sinai also included a second phase of the study, which is a study of air pollution and Alzheimer's disease. This

second phase of the study was not funded through the RFP. The approximate total cost for this second phase is $750,000, for a 1-year project period. The proposed study is a toxicological study of mice that are genetically pre-disposed to develop Alzheimer's disease. The study would look at specific genes that may be activated when mice are exposed to PM air pollution (coarse/fine/ultrafine). In February 2017, the Foundation Board approved funding the proposal for the second phase of the study, contingent on the transfer of funds from the Health Effects Fund and the Governing Board's approval of the amendments to the Articles of Incorporation and their subsequent filing with the Secretary of State.

Resource Impacts
None.

Attachment
Articles of Incorporation

CERTIFICATE OF AMENDMENT
RESTATED ARTICLES OF INCORPORATION
OF
BRAIN AND LUNG TUMOR AND AIR POLLUTION FOUNDATION
a California nonprofit public benefit corporation

Wayne Nastri and Denise Whitcher certify that:

1. They are the Chief Executive Officer and Secretary, respectively, of the Brain and Lung Tumor and Air Pollution Foundation, a California nonprofit public benefit corporation.

2. The Articles of Incorporation of this Corporation are hereby amended and restated in their entirety to read as follows:

"I.

NAME

~~BRAIN AND LUNG TUMOR AND~~ HEALTH EFFECTS OF AIR POLLUTION FOUNDATION

The name of this Corporation is ~~Brain and Lung Tumor and~~ Health Effects of Air Pollution Foundation.

I.

PURPOSES

This corporation is a nonprofit public benefit corporation and is not organized for the private gain of any person. It is organized under Nonprofit Public Benefit Corporation Law for public and charitable purposes.

The specific purposes of this corporation are: (i) to aid, assist, and support research on the incidence, detection and causes and cures of ~~brain and lung tumors~~various health conditions that may be ~~, especially those~~ caused or aggravated by air pollution; and (ii) to receive and utilize funds acquired through the solicitation of donations, gifts, and bequests for the purposes for which this corporation was formed.

Notwithstanding any other provision of these Articles of Incorporation, this corporation shall not carry on any other activities not permitted to be carried on by a corporation exempt from Federal income tax under section 501(c)(3) of the Internal Revenue Code of 1986 (or the corresponding provision of any future United States Internal Revenue Law), or by a corporation, contributions to

which are deductible under section 170(c)(2) of the Internal Revenue Code of 1986 (or the corresponding provision of any future United States Internal Revenue Law).

III.

MEMBER

This corporation shall have only one member within the meaning of Section 5056 of the California Corporations Code ("CCC"), and it is the South Coast Air Quality Management District, a district formed under statutes.

IV.

DEDICATION AND DISSOLUTION

(a) The property of this corporation is irrevocably dedicated to public and charitable purposes, and no part of the net income or assets of this corporation shall ever inure to the benefit of any director, officer, or member thereof, or to the benefit of any private person.

(b) On the dissolution or winding up of the corporation, its assets remaining after payment of, or provision for payment of, all debts and liabilities of this corporation shall be distributed to a nonprofit fund, foundation, or corporation which is organized and operated exclusively for public or charitable purposes and which has established its tax-exempt status under section 501(c)(3) of the Internal Revenue Code of 1986 (or the corresponding provision of any future United States Internal Revenue Law), and whose sole member is the South Coast Air Quality Management District.

(c) If this corporation holds any assets in trust, or if the corporation is formed for charitable purposes, then such assets shall be disposed of in such manner as may be directed by decree of the superior court of the county in which the corporation has its principal office, on petition therefore by the Attorney General or by any person concerned in the liquidation, in a proceeding to which the Attorney General is a party.

V.

LIMITATION ON CORPORATE ACTIVITES

No substantial part of the activities of this corporation shall consist of the carrying on of propaganda, or otherwise attempting to influence legislation, nor shall this corporation participate or intervene in any political campaign (including publishing or distribution of statements) on behalf of or in opposition to any candidate for public office.

VI.

AMENDMENT

These Articles of Incorporation may not be amended, restated, or modified without the consent of its sole member and without the consent of more than two-thirds (2/3) majority of the Board of Directors of this corporation."

3. The foregoing amended and restated Articles of Incorporation have been duly approved by the Board of Directors of this Corporation.

4. The foregoing amended and restated Articles of Incorporation have been duly approved by the member of this Corporation. This Corporation has one member.

We further declare under penalty of perjury under the laws of the State of California that the matters set forth in this certificate are true and correct of our own knowledge.

Dated: _____

_____
Wayne Nastri
Chief Executive Officer

_____
Denise Whitcher
Secretary

Clean Transportation
Funding from the MSRC
Mobile Source Air Pollution Reduction Review Committee

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 14

PROPOSAL: Approve Contract Awards and Modification, Reallocation of Funds, and Issue Solicitation Approved by MSRC

SYNOPSIS: As part of their FYs 2014-16 AB 2766 Discretionary Fund Work Program, the MSRC approved a new contract under the Near-Zero Heavy-Duty Natural Gas Engine Incentive Program, and reallocated $4,000,000 from the Enhanced Fleet Modernization Program to the FYs 2016-18 Work Program. The MSRC also approved a modification to a contract under the Local Government Match Program as part of their FY 2011-12 Work Program, a replacement contract under their FYs 2012-14 Work Program, and the release of a Program Announcement for the Major Event Center Transportation Program as part of their FYs 2016-18 Work Program. At this time the MSRC seeks Board approval of the contract awards and modification and to release the solicitation.

COMMITTEE: Mobile Source Air Pollution Reduction Review, November 17, 2016 and February 16, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Approve contract award to Long Beach Transit in an amount not to exceed $600,000 under the Near-Zero Heavy-Duty Natural Gas Engine Incentive Program, as part of approval of the FYs 2014-16 Work Program, as described in this letter;
2. Recognize MSRC's reallocation of $4,000,000 to FYs 2016-18 Work Program, from $6,201,000 previously allocated under FYs 2014-16 Work Program for partnership with SCAQMD in its implementation of the Enhanced Fleet Modernization Program (EFMP), allowing remaining unexpended funds to continue to be used for the voucher portion of the program in current and future years, as described in this letter;
3. Approve modified contract with the City of Bellflower under the Local Government Match Program, substituting the installation of two Level III/DC Fast Charger stations for the eight Level II stations specified in the contract, with a corresponding reduction in the contract value from $170,000 to $100,000, as part of approval of the FY 2011-12 Work Program, as described in this letter;

4. Approve a new/replacement contract with the City of Yucaipa, in an amount not to exceed $84,795, for the installation of bicycle lane improvements on five roadways, as part of approval of the FYs 2012-14 Work Program, as described in this letter;
5. Issue Program Announcement for the Major Event Center Transportation Program, with a targeted funding level of $5,000,000, as part of approval of the FYs 2016-18 Work Program, as described in this letter and in the attached;
6. Authorize MSRC the authority to adjust contract awards up to five percent, as necessary and previously granted in prior work programs; and
7. Authorize the Chairman of the Board to execute new and modified contracts under FY 2011-12, FYs 2012-14, and FYs 2014-16 Work Programs, as described above and in this letter.

Greg Pettis,
Chair, MSRC

MM:HH:CR

Background

In September 1990 Assembly Bill 2766 was signed into law (Health & Safety Code Sections 44220-44247) authorizing the imposition of an annual $4 motor vehicle registration fee to fund the implementation of programs exclusively to reduce air pollution from motor vehicles. AB 2766 provides that 30 percent of the annual $4 vehicle registration fee subvened to the SCAQMD be placed into an account to be allocated pursuant to a work program developed and adopted by the MSRC and approved by the Board.

In November 2014, the MSRC selected initial categories for the FYs 2014-16 Work Program. Additional project categories continued to be developed and were brought forward for MSRC consideration in subsequent months. Similarly, in October 2016, the MSRC selected initial categories for the FYs 2016-18 Work Program. At its November 17, 2016 and February 17, 2017 meetings, the MSRC considered a replacement contract, a recommended contract modification, and a recommended award under the Near-Zero Heavy-Duty Natural Gas Engine Incentive Program. The MSRC also considered the issuance of a solicitation for the Major Event Center Transportation Program. Details are provided below in the Proposals section.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, public notices advertising the Major Event Center Transportation Program Announcement 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. In addition, the Program Announcement will be advertised in the Desert Sun newspaper for expanded outreach in

the Coachella Valley. Public notices advertising the Near-Zero Heavy-Duty Natural Gas Engine Incentive Program were likewise published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, Riverside County Press Enterprise, and Desert Sun newspapers.

Additionally, potential bidders may be and/or may have been notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the solicitations will be/was e-mailed 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). Further, the solicitations will be/were posted on the MSRC's website at http://www.cleantransportationfunding.org and electronic notifications will be/were sent to those subscribing to this website's notification service.

Proposals

At its November 17, 2016 and February 16, 2017 meetings, the MSRC considered recommendations from its MSRC-TAC and approved the following:

FYs 2014-16 Near-Zero Heavy-Duty Natural Gas Engine Incentive Program

As part of the FYs 2014-16 Work Program, the MSRC allocated $10,000,000 to provide funds towards the purchase cost of the Cummins Westport ISL G Near Zero natural gas engine. This engine is certified to the CARB Optional NOx standard of 0.02 g/bhp-hr. A Program Announcement, #PA2016-11, was developed and released on June 3, 2016. Eligible vehicle types include urban transit buses and refuse collection trucks. For qualifying transit buses, the MSRC allocated $7.5 million, with a maximum per-entity award amount of $1.875 million, and will award $15,000 per vehicle for either new bus purchases or the re-power (engine replacement) of existing buses. For qualifying refuse trucks, the MSRC allocated $2.5 million, with a maximum per-entity award amount of $625,000, and will award $25,000 per vehicle, for re-powers only. The Program Announcement included an open application period which commenced July 5, 2016 and closed January 6, 2017. To date, the MSRC has awarded a total of $5,215,000. One additional application was received by the closing date. The MSRC-TAC recommended, and the MSRC approved, a contract award to Long Beach Transit in an amount not to exceed $600,000 for the purchase of 40 new transit buses, as part of the FYs 2014-16 AB 2766 Discretionary Fund Work Program.

FYs 2014-16 Enhanced Fleet Modernization Program

The EFMP is a vehicle retirement and replacement program authorized by the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (AB 118). The program focuses on providing greater incentives to eligible low- and middle-income owners of older vehicles to scrap their existing vehicle and receive a voucher either to help acquire a newer vehicle or cover the cost for transit passes or participation in car-sharing programs. In conjunction, the EFMP Plus-Up

supplements the EFMP by increasing incentives for certain advanced technology replacement vehicles.

The MSRC previously allocated $800,000 (approved by the Board in December 2014) and up to $6,201,000 (approved by the Board in October 2015) to augment the SCAQMD funds to implement the EFMP and EFMP Plus-Up as an element of the FYs 2014-16 Work Program. The later increment of funding was designated for the voucher program only, to help match the funding for the EFMP Plus-Up portion of the program. A portion of this original match funding has not yet been utilized. The MSRC received an update on the program. The MSRC-TAC recommended, and the MSRC approved, the reallocation of $4,000,000 to the FYs 2016-18 Work Program, to be subsequently reprogrammed as part of the Work Program development process. The remaining balance of $651,000 may continue to be used for the voucher portion of the program in current and future years.

FY 2011-12 Local Government Match Program

In August 2012, the MSRC approved an award to the City of Bellflower in an amount not to exceed $270,000 for the installation of 15 electric vehicle charging stations; this was subsequently modified to $170,000 for eight stations. The City now believes that fast chargers would be more popular, and experience a greater turnover, than the Level II charging stations specified by the contract. The City requested approval to substitute the installation of two fast chargers for the eight Level II chargers, coupled with a corresponding contract value reduction from $170,000 to $100,000. The MSRC considered and approved the City's requested contract modification.

FYs 2012-14 Local Government Match Program

As part of the FYs 2012-14 Work Program, the MSRC awarded the City of Yucaipa $84,795 towards the installation of bicycle lane improvements on five roadways. The contract to effectuate the project lapsed on July 1, 2016. In October 2016, the City submitted a request to complete the project. They indicated that the bicycle lanes were part of a larger project for rehabilitation of asphalt streets throughout the City, and restriping of the streets once the asphalt work was completed. As part of the re-striping process, the bicycle lanes would be installed. The City attests that their contractor failed to comply with the construction contract, they were unable to reach a resolution, and on August 22, 2016 the City terminated the contract with the contractor. The City has now awarded a construction contract for their 2016/2017 Street Striping Program which includes the specified bicycle lanes. The MSRC considered and approved a 12-month replacement contract in the amount of $84,795 as part of the FYs 2012-14 Work Program.

FYs 2016-18 Major Event Center Transportation Program

The MSRC approved release of Program Announcement #PA2017-05 under the FYs 2016-18 Work Program. The Program Announcement, with an initial targeted funding amount of $5,000,000, solicits applications from qualifying major event centers and/or

transportation providers to provide transportation service for venues not currently served by sufficient transportation service. To qualify, an event center must have an occupancy capacity of at least 7,500, and an average event attendance of at least 5,000. The applicant must demonstrate that the center is impacted by traffic to the extent that the design capacity of the surrounding streets is exceeded. Applications may be submitted at any time from March 3, 2017 to March 30, 2018, and projects will be brought to the MSRC for consideration of awards throughout the application this period. The maximum total funding award to any entity shall not exceed $2,500,000, and the maximum amount which can be applied to transportation programs at any one event center is $1,500,000. The MSRC can waive these maximum funding restrictions in the event the MSRC does not receive sufficient meritorious proposals from other bidders to utilize the remaining funds, or if the MSRC allocates additional funds to the Program.

At this time, the MSRC requests the SCAQMD Board to approve the contract awards and modification, to recognize the MSRC's reallocation of funding from the EFMP program, and to approve release of the Program Announcement, as part of approval of the FY 2011-12, FYs 2012-14, FYs 2014-16 and FYs 2016-18 AB 2766 Discretionary Fund Work Programs as outlined above. The MSRC also requests the Board to authorize the SCAQMD Chairman of the Board the authority to execute all agreements described in this letter. The MSRC further requests authority to adjust the funds allocated to each project specified in this Board letter by up to five percent of the project's recommended funding. The Board has granted this authority to the MSRC for all past Work Programs.

Resource Impacts
The SCAQMD acts as fiscal administrator for the AB 2766 Discretionary Fund Program (Health & Safety Code Section 44243). Money received for this program is recorded in a special revenue fund (Fund 23) and the contracts specified herein, as well as any contracts awarded in response to the solicitation, will be drawn from this fund.

Attachment
Program Announcement #PA2017-05 – Major Event Center Transportation Program

Clean Transportation
Funding from the MSRC
Mobile Source Air Pollution Reduction Review Committee

MAJOR EVENT CENTER TRANSPORTATION PROGRAMS

"Air Quality Improvements through Automobile Trip Reduction & Roadway Congestion Mitigation"

Funding for the Implementation of New or Expanded Public Transportation Programs for Event Center Destinations Located in the South Coast Air Quality Management District

2017-2018 Edition

Program Announcement

PA2017-05

March 3, 2017

SECTION 1 - INTRODUCTION

There are numerous Major Event Centers located within the South Coast Air Quality Management District jurisdiction – these include sports arenas, fairgrounds, stadiums, race tracks, speedways, Convention Centers, etc. Compared to other destination centers such as shopping malls, event centers are utilized on a less frequent, and more importantly, less consistent basis. In the case of sports venues, the arena or stadium is used frequently during the regular season, but sits relatively idle during the offseason.

However, when a ball game, NASCAR race, or other high profile, high attendance event is scheduled at a major event center, the impacts on surrounding communities are usually much more disruptive as compared to other destination centers. As drivers, we have all experienced the traffic impacts created prior to and following an event at a major venue. Surface streets surrounding the event center are impacted by traffic volumes that greatly exceed capacity, freeways are impacted at off-ramps, and vehicle queues extend at signalized intersections to the point where gridlock ensues.

While we understand and even anticipate the extreme traffic congestion that accompanies special events, we often forget that gridlock also has a significant impact on air quality. Vehicles that inch along in stop and go traffic or idle for extended periods burn excessive amounts of fuel and emit excessive levels of air pollutants. The impacts extend well beyond the vehicles that actually attend the event center – traffic impacts can extend for many miles surrounding the event center and impact streets, major arterials, and freeways.

An effective strategy to reduce traffic congestion and its associated air quality impacts, not to mention driver frustration and stress, is to utilize public transportation in lieu of driving to the event. Given these benefits, many newer event centers are located adjacent to regularly scheduled bus, shuttle, or rail service. Event center patrons who take advantage of public transportation are typically spared the aggravation associated with event center parking lot congestion, avoid excessive parking fees and, whether they realize it or not, are doing something beneficial for the environment by *not* driving their car.

The MSRC, however, is aware that not all major event centers within the South Coast AQMD jurisdiction are served by regularly scheduled transit service. In some cases, the regularly scheduled service that is provided does not match the spike in demand that occurs before and particularly after an event, and therefore requires schedules and service levels to be adjusted to meet the event schedule.

The purpose of this Program Announcement is to identify opportunities to reduce automobile trips, traffic congestion, and their associated air pollutant emissions by shifting attendees of major event center functions out of their personal automobile and onto public transportation. The goal is to align major event centers with transit providers to create a transportation option for event attendees as an alternative to their personal automobile. A shift from automobile to transit benefits not only those who take advantage of the service, but also the communities where the event center is located. The air pollution reduction benefits achieved through automobile trip reduction and congestion relief benefit all residents of the South Coast AQMD.

To facilitate implementation of new or expanded public transportation programs that facilitate use of transportation services to major event centers, the Mobile Source Air Pollution Reduction Review Committee (MSRC) has allocated a total of $5.0M in **Clean Transportation Funding**™. This funding opportunity has at its core the following goals and objectives:

- Seek out major event center venues located within the South Coast AQMD jurisdiction that experience high levels of traffic congestion during scheduled events and are not served by, or are insufficiently served by, regular public transit services;
- Partner with transit providers and event center venues to develop and implement new or expanded programs to attract patrons to transit services that are tailored to each venue's scheduled events;
- Encourage transit providers and event center venues to establish ongoing relationships to continue event-specific transit service beyond the MSRC funding period, including the identification of funding sources in addition to the MSRC to support future transportation services.

The MSRC has offered funding for implementation of Event Center Transportation programs for the past several years. This Event Center Transportation Program funding opportunity spans *two fiscal years* – FY 2017 *and* FY 2018. This is intended to provide additional flexibility in the development and implementation of event center transportation projects.

To reduce the need to photocopy, package, and physically submit paper applications, the FY 2017-'18 Edition of the Major Event Center Transportation Program **requires that applications be submitted electronically in PDF format using the MSRC Website**. We believe this benefits the applicant, the MSRC staff, and the environment.

While many of the features of the previous programs are retained in this funding opportunity, several major changes should be noted:

- ☆ All events receiving MSRC **Clean Transportation Funding**™ under this Program Announcement must be held no later than December 31, 2019.
- ☆ Applicants are eligible to propose a maximum of two (2) consecutive event "seasons", wherein a "season" consists of multiple events or an event that spans multiple days.
- ☆ All bus and shuttle vehicles performing Event Center transportation services under this Program must be equipped with an engine that is certified at - *or cleaner than* – the EPA 2010 emissions standards and certified as such by the California Air Resources Board. All fuels and technologies certified to the 2010 emissions standards are acceptable.
- ☆ Applicants that commit to utilize zero-emission or near-zero emission technologies are eligible to receive a higher match. For the purpose of this Program Announcement, "zero-emission" vehicles have zero tailpipe emissions. "Near-zero" technologies have certified NOx emission rates equal to or less than 0.02 grams per brake horsepower-hour (g/bhp-hr) or 0.08 gram per mile.
- ☆ For projects that propose expanded rail service, the MSRC requires that Tier 4 locomotives be used for all events beginning January 1, 2018. Tier 4 locomotives must also be used, if available, prior to January 1, 2018. Tier 2 locomotives can be used in support of event center transportation only in the event Tier 4 locomotives are not available and in no case beyond December 31, 2017.

The following Sections describe the eligibility requirements to participate in the MSRC Major Event Center Transportation Services Program, limits on the amount of **Clean Transportation Funding**™ available to Program participants, and guidelines for proposal preparation. It is important to recognize that the MSRC must ensure that the use of Clean Transportation funds will result in direct, tangible, and quantifiable air quality benefits. To

this end, this Program Announcement stipulates specific performance thresholds and participation obligations that must be met in order to be deemed eligible for an MSRC funding award. Projects submitted for funding consideration will be scrutinized to ensure they meet the minimum eligibility requirements described herein. It is likely that some event center transportation proposals will be deemed ineligible or to offer insufficient benefits and will not receive an MSRC funding award.

MSRC staff members are available to answer questions and provide technical and programmatic guidance as appropriate. Please refer to Section 6 of this document for a list of MSRC Staff contacts.

Available Funding - The amount of FY 2017-'18 MSRC **Clean Transportation Funding**™ allocated for the Major Event Center Transportation Program is $5.0M. This funding level is a targeted amount – should meritorious projects be received totaling greater than $5.0M, the MSRC reserves the right to increase the amount of total funding available.

Also, should the MSRC receive proposals with total requests less than the amount allocated, or if proposals are deemed non-meritorious, the MSRC reserves the right to reduce the total funding available and reallocate funds to other Work Program categories. The MSRC also reserves the right to not fund any of the proposals received, irrespective of the merits of the proposals submitted.

Please note that the source of MSRC **Clean Transportation Funding**™ for projects submitted in response to this solicitation is motor vehicle registration fees collected by the California Department of Motor Vehicles (DMV) in accordance with the California Health and Safety Code. Thus, the availability of MSRC **Clean Transportation Funding**™ is contingent upon the timely receipt of funds from the DMV. Neither the MSRC nor South Coast AQMD can guarantee the collection or remittance of registration fees by the DMV.

SECTION 2 – ELIGIBILITY REQUIREMENTS

This Program Announcement seeks to facilitate the reduction of automobile trips and mitigate traffic congestion by shifting event attendees out of their personal automobile and onto public transportation at major event centers that are not currently served by adequate, regularly scheduled transit or shuttle service prior to, during, and following the venue's events.

For the purpose of this Program Announcement, the following eligibility requirements apply:

- **Major Event Center** – a Major Event Center is defined as a publicly or privately-owned, publicly accessible venue located within the geographical jurisdiction of the South Coast Air Quality Management District that possesses the following attributes, at a minimum:
  - Occupancy capacity of at least 7,500 people;
  - Average event attendance of at least 5,000 people;
  - Dedicated parking lot or structure co -located with the event center.
- **Traffic Impacted Event** – A scheduled event held at a Major Event Center that results in recurrent traffic congestion prior to, during, or after the scheduled event whose impact on surrounding roadways, arterials, intersections, or freeways exceeds design capacity;

  Only event centers that are Traffic Impacted are eligible to participate in this Program!

- **Transportation Provider** – includes but is not necessarily limited to a) public transit agencies, including regional and municipal transit agencies and authorities; b) private transit operators, including subcontractor service providers to public transit agencies; and c) paratransit providers and other licensed, private transportation and shuttle providers;
- **Qualifying Transportation Vehicles** – vehicles proposed for use in Event Center Transportation Services must conform to the following minimum requirements:

  Bus and Shuttle Vehicles:

  - All bus and shuttle vehicles performing Event Center transportation services under this Program must be equipped with an engine that is certified at - *or cleaner than* – the EPA 2010 emissions standards and certified as such by the California Air Resources Board. All fuels and technologies certified to the 2010 emissions standards are acceptable[1];
  - Applicants that commit to utilize zero-emission or near-zero emission technologies[2] are eligible to receive a higher match as discussed in Section 3, Paragraph 6, "Program Co-Funding Requirements";
  - Vehicle Seating Capacity – vehicles must have a minimum seated position capacity of twenty-two (22) occupants;
  - Vehicles must meet all Americans with Disabilities Act (ADA), US Department of Transportation (DOT), California Department of Motor Vehicles (DMV), and other applicable regulatory agency requirements.

  Rail Service:

  - For projects that propose expanded rail service, the MSRC requires that Tier 4 locomotives be used for all events beginning January 1, 2018. Tier 4 locomotives must also be used, if available, prior to January 1, 2018. Tier 2 locomotives can be used in support of event center transportation only in the event Tier 4 locomotives are not available and in no case beyond December 31, 2017.
- **Transportation Deficient** – the Event Center must be Transportation Deficient. This is defined as an Event Center that is not served by regularly scheduled public transit or private shuttle service sufficient to entice patrons to attend the event using public transit rather than private automobile, or is served by public and/or private transportation services that are operating at maximum capacity. **Please note that this Program Announcement is NOT intended to subsidize ongoing public or private transportation services**.

The MSRC seeks the formation of *partnerships* between traffic-impacted, transportation-deficient major event centers and transportation providers who operate qualifying vehicles. The following Sections define who is

[1] 2010 emission standards require NOx emissions less than or equal to 0.2 g/bhp-hr and particulate matter emissions less than or equal to 0.01 g/bhp-hr.

[2] For the purpose of this Program Announcement, "zero-emission" vehicles have zero tailpipe emissions. "Near-zero" technologies have certified NOx emission rates equal to or less than 0.02 grams per brake horsepower-hour (g/bhp-hr) or 0.08 gram per mile.

eligible to submit a proposal to the MSRC, who is eligible to enter in to a contract for event center transportation services, and what transportation costs are eligible for reimbursement by the MSRC:

- ***Who can submit a proposal in response to this Program Announcement?*** Either a qualifying major event center, a qualifying transportation provider, or a County Transportation Commission may respond to this Program Announcement and submit a proposal for MSRC consideration. Proposals may also be submitted from a joint County Transportation Commission/event center/transportation provider partnership. Please note that the following conditions apply:
  - A proposal submitted by qualifying Major Event Centers must identify what Transportation Provider(s) will provide the event center service. The proposal must include a Memorandum of Understanding (MOU) or letter of support between the event center and transportation provider(s) stating their mutual intent to implement and operate event center transit service in accordance with Program requirements in the event the MSRC provides a funding award;
  - A proposal submitted by a qualifying Transportation Provider must identify which Major Event Center(s) will be served in the Program. The proposal must include an MOU or letter of support between the transportation provider and event center(s) stating their mutual intent to implement and operate event center transit service in accordance with Program requirements in the event the MSRC provides a funding award;
  - A proposal submitted by a County Transportation Commission must identify which Major Event Center(s) will be served in the Program and identify what Transportation Provider(s) will provide the event center service. The proposal must include an MOU or letter of support between the County Transportation Commission and transportation provider and/or event center(s) stating their mutual intent to implement and operate event center transit service in accordance with Program requirements in the event the MSRC provides a funding award;
  - A proposal submitted jointly by a County Transportation Commission in partnership with an event center and transportation provider(s) must also include an MOU or letter of support, as above.
- ***Who is eligible to receive an award of MSRC Clean Transportation Funding™ under this Program Announcement?*** While either a County Transportation Commission, major event center or qualifying transportation provider are eligible to submit a proposal, **only the qualifying transportation provider or County Transportation Commission is eligible to enter into a contract on behalf of the proposed event center transportation service partnership**. The rationale for this restriction is that *only transportation service costs (including transit program and traffic control costs) are eligible for reimbursement under this Program.* Thus, it makes sense that the service provider who incurs direct expenses in providing transportation services be the party to the contract that provides reimbursement. Please note that the MSRC does not enter into three-party agreements.

In summary, major event centers that meet the above eligibility requirements and transportation providers that meet qualifying requirements are eligible to participate in this MSRC Program. Both Event Centers and Transportation Providers are eligible to submit a proposal; however, each party must be identified by name in

the proposal, accompanied by a MOU between the named participants. Only the transportation provider can be the MSRC funding recipient and contract signatory.

SECTION 3 - PARTICIPATION GUIDELINES, CONDITIONS & RESTRICTIONS

The following guidelines, requirements, and conditions have been established and apply to all Proposals:

1. **Program Scope** – The primary objective of this Program is to eliminate automobile trips, reduce automobile vehicle miles traveled (VMT), and reduce traffic congestion in the vicinity of a major event center prior to, during, and following an event, resulting in a reduction in air pollutant emissions. Automobile trip reduction and traffic congestion mitigation are achieved by shifting the travel mode of event attendees from their personal automobile and onto new or expanded public transportation service or dedicated shuttle event center feeder service. To facilitate this mode shift, the MSRC will consider proposals for event center transportation services. MSRC **Clean Transportation Funding**™ is available to co-fund the cost of implementing new or expanded transportation programs. Only direct costs of transportation programs are eligible for reimbursement under this Program. Proposals submitted in response to this Program Announcement must include as named participants the major event center where new or expanded transit or shuttle service will be operated, as well as the transportation provider who will implement the event center transportation program.
2. **Maximum MSRC Funding Limits**– To ensure broad-based participation, the MSRC has established the following maximum funding parameters:
    a. The maximum total funding award to any entity that provides event center transportation programs under this solicitation shall not exceed 50% of the total Available Funding. The total available funding currently allocated by the MSRC for this Program is $5.0M. Thus, the maximum total funding award for any single transportation service provider is currently set at $2.5M. This maximum funding restriction can be waived by the MSRC in the event the MSRC does not receive meritorious proposals from other bidders that meet or exceed 50% of the total available funds, or if the MSRC allocates additional funds to the Program. The MSRC reserves the right to determine which projects, if any, are deemed meritorious and warrant a **Clean Transportation Funding**™ award; and
    b. The maximum funding allocated for transportation programs for any single major event center shall not exceed 30% of the total available funding. Thus, the maximum MSRC funding amount that can be applied to implementing transportation programs at any one event center is currently limited to a maximum of $1,500,000, subject to the MSRC discretionary provisions cited above.
    c. All events receiving MSRC **Clean Transportation Funding**™ under this Program Announcement must be held prior to December 31, 2019.
    d. Applicants are eligible to propose a maximum of two (2) consecutive event "seasons", wherein a "season" consists of multiple events or an event that spans multiple days.
3. **Geographical Funding Minimum -** The MSRC has established a Geographical Funding Minimum for each county within the SCAQMD. The geographical funding minimum amount has been set at $350,000 per county. This funding set-aside guarantees a minimum level of funding for each county to implement Event Center Transportation projects. At the end of the application submittal period, March 30, 2018, if any county

has funds remaining in its geographical minimum, these funds will be made available to qualifying projects from any other county in order of receipt.

4. **Eligible Uses of MSRC Funds –** MSRC funds may be used to offset direct operating costs associated with event center transportation programs. These include transportation operations and traffic control costs as defined below:

   - **Transportation Operations** – Direct costs associated with operations of event center transportation vehicle and/or rail operations subject to the requirements and conditions outlined in Section 2, Eligibility Requirements;

   - **Event Center Traffic Control/Bus Priority –** Costs associated with providing traffic control to provide participating transportation vehicles event center ingress and egress priority may also be proposed as project co-funding. This includes, but is not necessarily limited to: special lane designation for transit vehicles, including cones, lane striping, etc.; traffic control personnel to direct traffic and grant participating vehicles faster entry and exit; designation of areas for drop off and pickup of event center patrons who utilize the transportation service, including directional signage, markings and placards, etc.

5. **Transportation Programs Advertising, Outreach, Marketing, and Promotion –** All event center transportation programs projects that receive an MSRC **Clean Transportation Funding**™ award must include advertising and promotion of the availability of the service as a project element. ***This is a mandatory component of any MSRC-funded event center transportation programs project.*** Advertising and promotion may include, but is not limited to:

   a) Radio, television, newspaper, or specialty publication advertisements;

   b) Print materials;

   c) Materials developed for incorporation into a website, electronic media, etc.;

   d) Transportation program kickoff events, ribbon cuttings, or news conferences, etc.

6. **Program Co-Funding Requirements –** Major event center projects funded by the MSRC are required to provide project co-funding in an amount **no less than 50% of the total project cost**, i.e., a "dollar for dollar match of eligible project co-funding to MSRC **Clean Transportation Funding**™.

   ☆ Projects that propose the use of Zero Emission or Near-Zero emission vehicles or engines are eligible to receive a higher MSRC **Clean Transportation Funding**™ match. **Major event center projects that utilize qualifying zero and near-zero emission vehicles are required to provide project co-funding in an amount no less than 25% of the total project cost.**

   ☆ **For transportation fleets that propose a mix of "2010 standard"-compliant vehicles and "zero/near-zero" vehicles, the match requirement bonus will be prorated based on fleet composition.** The determination of whether a vehicle meets zero/near-zero eligibility is solely at the discretion of the MSRC.

   Eligible project co-funding includes the following:

- **Direct Cost Share** – Cash, direct labor, and equipment use contributions from the transportation provider may be accounted for as co-funding;
- **Fare box Revenue** – Fare box revenue collected to augment MSRC-funded transportation program may be documented and applied as co-funding;
- **Transportation Programs Outreach, Marketing, and Promotion** – Costs associated with advertising the availability of event center transportation programs may be applied as co-funding. Appropriate outreach may include, but is not limited to, radio, television, newspaper, or specialty publication advertisements, printed materials, materials developed for incorporation into a website, electronic media, transportation program kickoff events, ribbon cuttings, or news conferences, etc.
- **Event Center Traffic Control/Bus Priority –** Costs associated with providing traffic control to provide participating transportation vehicles event center ingress and egress priority may also be proposed as project co-funding.

7. **Funding Restrictions** – MSRC funds may only be applied to direct operating costs associated with event center transportation programs. These include transportation operations and traffic control costs only. MSRC funds cannot be used:
   - To fund capital acquisition costs associated with transportation vehicle purchase;
   - To recoup lost parking lot revenue.

8. **MSRC Funds Remitted on a Reimbursement Basis** - MSRC funds will be distributed on a reimbursement basis only upon completion of approved project milestones and submission of all required reports and invoices.

9. **Additional Conditions on MSRC Funding**
   - MSRC projects are funded on a "site-specific" basis; that is, each project is evaluated with respect to the proposed event center's unique location, traffic congestion, availability of other transportation options, etc. Thus, proposals that result in an award of MSRC funds are <u>not allowed</u> to change the event center venue under any circumstances. In the event the proposed venue becomes unavailable, nonviable, or no longer cost-effective, either contract negotiations will terminate or the contract will terminate, as applicable;
   - Project Proposers are expected to provide a project implementation schedule as an element of their Proposal. In the event a Proposal is awarded MSRC funds resulting in a contract, the proposed project implementation schedule will become an element of the contract. In the event a contractor is unable to meet project milestones and requires additional time, the MSRC reserves the right to administratively authorize a one-time extension to the period of performance, not to exceed an additional one (1) year. <u>No additional extensions to the contract period of performance will be granted</u>;
   - All projects must include an advertising, marketing, and outreach component. Acceptable outreach strategies are described in the previous section;
   - Conflict of Interest – Proposers must identify possible conflicts of interest with other clients affected by actions performed by the firm on behalf of the MSRC. Although the bidder will not be automatically

disqualified by reason of work performed for such firms, the MSRC reserves the right to consider the nature and extent of such work in evaluating the proposal.

- Certifications – All Proposers must complete and submit the included Attachment G forms as an element of their Proposal (unless specifically exempted below):
  - Internal Revenue Service Form W-9 – Request for Taxpayer Identification Number and Certification, and Franchise Tax Board Form 590 – Withholding Exemption Certificate. If you are selected for an award, you cannot be established as a vendor without this information.
  - Campaign Contributions Disclosure. This information must be provided at the time of application in accordance with California law. You may be asked for an update when awards are considered.
  - MSRC Prospective Contractor Information. This information is needed to help determine if any financial interests exist under the Government Code or other California law. For purposes of this form, the entity which would enter into a contract with SCAQMD is the Contractor.
  - Disadvantaged Business Certification. The SCAQMD needs this information for their vendor database. It will not be considered in the determination of your MSRC funding award. Governmental entities do not need to complete this form.
- Finally, in accordance with state law, all projects awarded MSRC **Clean Transportation Funding**™ are subject to audit. The provisions of the audit are discussed in the Sample Contact, included as Section 9 of this Program Announcement. It is highly recommended that bidders employ government accepted accounting practices when administering their MSRC co-funded project.

SECTION 4 – PROGRAM ANNOUNCEMENT TIMETABLE

The MSRC understands that developing an event center transportation programs project is a complex undertaking. The MSRC also appreciates that events scheduled at a major venue are firm; thus, the MSRC Program is designed to afford potential proposers as much flexibility as possible to allow development of outstanding event center transportation projects. To that end, the MSRC has established an approximately one-year window to prepare and submit proposals for funding consideration.

Table 4-1 - Key Event Center Transportation Programs Program Dates

Program Event	Date
Program Announcement Release	March 3, 2017
Application Submittal Period	March 3, 2017 – March 30, 2018
Latest Date/Time for Electronic Application Submittal	March 30, 2018 @ 11:59 p.m.

SECTION 5 - PROPOSAL PREPARATION & SUBMITTAL INSTRUCTIONS

An Event Center Transportation Project Proposal must be completed and submitted for funding consideration under this Program. Proposals must be prepared and submitted in accordance with the instructions outlined below.

1. **Proposal Preparation** – The following information must be included in all Proposals seeking MSRC **Clean Transportation Funding**™ under the Major Event Center Transportation Programs Program:

   a) **Attachments A-G** - Proposals must include the following completed Attachments, including all required supporting documentation as requested. Proposal Templates and Instructions are included in Section 8 of this Program Announcement:

   - Attachment A: Proposer and Project Participant Information
   - Attachment B: Project Description
   - Attachment C: Project Cost Breakdown
   - Attachment D: Project Implementation Schedule
   - Attachment E: Memorandum of Understanding/letter of support between Event Center(s) and Transportation Services Provider(s) (as applicable)
   - Attachment F: Transportation Service Ridership Estimates
   - Attachment G: Certifications

2. **Electronic Application Submittal Process –** To reduce the need to photocopy, package, and physically submit paper applications, the FY 2017-'18 Major Event Center Transportation Program requires that applications be submitted electronically in PDF format using the MSRC Website. We believe this benefits the applicant, the MSRC staff, and the environment.

The application that will be submitted as a **PDF document** is comprised of seven (7) primary sections – these correspond to the application Attachments A-G as described in the preceding section. Thus, a complete application will be comprised of the following elements:

1. Attachment A: Proposer and Project Participant Information
2. Attachment B: Project Description
3. Attachment C: Project Cost Breakdown
4. Attachment D: Project Implementation Schedule
5. Attachment E: Memorandum of Understanding/letter of support between Event Center(s) and Transportation Services Provider(s) (as applicable)
6. Attachment F: Transportation Service Ridership Estimates
7. Attachment G: Certifications

a. W-9 Form and Form 590

b. Disadvantaged Business Certification Form

c. MSRC Prospective Contractor Information

d. Campaign Contribution Disclosure Form

These seven sections, including Attachment G certifications, are to be compiled into a **single PDF document** for submittal to the MSRC Clean Transportation Funding Website. **Please note that ONLY PDF format can be accepted. Microsoft Word documents cannot be accepted by the MSRC Website**. Applicants will need to register on the MSRC Clean Transportation Funding website.

Please note that the latest date and time to submit an application is March 30, 2018 at 11:59 pm!

3. **Addenda** – The Mobile Source Air Pollution Reduction Review Committee may modify the Program Announcement and/or issue supplementary information or guidelines relating to the Program Announcement during the Proposal preparation and acceptance period of March 3, 2017 to March 30, 2018. Amendments will be posted on the MSRC website at www.cleantransportationfunding.org.

4. **Proposal Modifications -** Once submitted, Proposals cannot be altered without the prior written consent of the Mobile Source Air Pollution Reduction Review Committee.

5. **Certificates of Insurance** - Upon notification of an MSRC funding award, a certificate(s) of insurance naming the South Coast Air Quality Management District (SCAQMD) as an additional insured will be required within forty-five (45) days. Entities that are self-insured will be required to provide proof of self-insurance prior to contract execution.

SECTION 6 - IF YOU NEED HELP…

This Program Announcement can be obtained by accessing the MSRC web site at www.cleantransportationfunding.org. MSRC staff members are available to answer questions during the Proposal acceptance period. In order to help expedite assistance, please direct your inquiries to the applicable staff person, as follows:

- For **General or Technical Assistance**, please contact:
  Ray Gorski
  MSRC Technical Advisor
  Phone: 909-396-2479
  E-mail: Ray@CleanTransportationFunding.org

- For **Administrative Assistance,** please contact:
  Cynthia Ravenstein
  MSRC Contracts Administrator
  Phone: 909-396-3269
  E-mail: Cynthia@CleanTransportationFunding.org

- For **Contractual Assistance**, please contact:
  Dean Hughbanks
  SCAQMD Procurement Manager
  Phone: 909-396-2808
  E-mail: dhughbanks@aqmd.gov

SECTION 7- PROPOSAL EVALUATION AND APPROVAL PROCESS

Proposals will be screened upon receipt by MSRC staff members to determine compliance with all mandatory requirements. Proposals deemed compliant will be forwarded to an Evaluation Subcommittee comprised of members of the MSRC Technical Advisory Committee (MSRC-TAC). Proposals will be evaluated in order of receipt using criteria established by the MSRC; these criteria are listed below. Proposals will be recommended for funding based upon their perceived conformance with the established criteria and in accordance with the maximum funding provisions stipulated in Section 3.3 of this Program Announcement. Please note that the MSRC reserves the right to make funding awards upon determination that a proposed event center transportation program is meritorious. As such, it is possible that all funding allocated to this Program could be fully expended prior to the close of the proposal submittal period, March 30, 2018.

Evaluation Criteria – Factors to be used when assessing the merits of a proposed event center transportation project are outlined below. Each project will be assessed individually against the evaluation criteria. A maximum of 100 points is available – projects that receive less than 60 points will not be eligible for an MSRC funding award.

1. POTENTIAL TO ACHIEVE QUANTIFIABLE AIR POLLUTANT REDUCTIONS (0 - 75 Points). Each project will be analyzed to estimate its potential to achieve motor vehicle air pollution reductions, emphasizing reductions in oxides of nitrogen and particulate matter pollution. Factors to be evaluated include, but are not limited to:

   - The types, quantity, emissions profile, and proposed utilization of the vehicles proposed to implement the event center transportation services;
   - Event center transportation service ridership estimates based on previous documented event center project results, surveys or focus groups conducted to estimate potential transportation service utilization, etc.;
   - The event center location, population density, and location relative to major arterial roadways and freeways;
   - Availability of existing transportation options other than personal automobile;
   - The number of events scheduled or planned for the event center during the proposed period of program;
   - The average venue attendance;
   - The proposed fare; and
   - The ability to integrate the proposed transportation program with other existing public transportation services. This includes potential connectivity with existing bus line, rail lines, etc. Connectivity with

regional or municipal bus service, Metrolink, light rail, transit centers, park and ride lots, etc. will be evaluated.

2. ADDITIONAL PROJECT CO-FUNDING (0 - 10 Points). Projects that exceed the minimum co-funding requirements specified in Section 3, Paragraph 6 will receive up to 10 points based upon the following schedule:

Vehicle Type Providing Service	**5 points**	**10 points**
Meets minimum requirements	≥ 55% co-funding	≥ 75% co-funding
Meets optional emission standards	≥ 30% co-funding	≥ 50% co-funding

3. PROGRAM CONTINUATION PLAN (0 – 15 Points). The potential for extending event center transportation programs beyond the MSRC-funded period will be assessed. Projects that have a definitive plan for continuing transportation programs beyond the initial MSRC funding period will be awarded a higher point allocation.

Proposals deemed meritorious by the MSRC-TAC will be forwarded to the MSRC for evaluation, review, and potential funding approval. Please note that the MSRC retains full discretion and authority as it pertains to a potential award of **Clean Transportation Funding**™. The decision to award funding, or not award funding, will be based on the proposed project's potential to achieve direct and tangible emission reductions. Thus, it is anticipated that not all projects submitted for funding consideration will receive an MSRC award.

SECTION 8 - PROPOSAL ATTACHMENTS – PA2017-05

ATTACHMENT A: PROPOSAL CONTACT INFORMATION

A. Please provide the following Proposer information in the space provided (This is information about the entity submitting the proposal):

Business Name	
Division of:	
Subsidiary of:	
Website Address	
Type of Business *Check One:*	☐ Individual ☐ DBA, Name _____, County Filed in _____ ☐ Corporation, ID No. _____ ☐ LLC/LLP, ID No. _____ ☐ Other _____

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

B. Funding Request Summary:

MSRC **Clean Transportation Funding**™ Requested: $_____

Other Co-Funding Applied to Project: $_____

Total Project Cost: $_____

C. Please provide the following information about the Event Center in the space provided below:

Event Center Name	
Website Address	
Type of Venue	

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

D. Please provide the following information about the Transportation Service Provider in the space provided (If this information was provided in Section 8.A, simply type "See Above"):

Business Name	
Division of:	
Subsidiary of:	
Website Address	
Type of Business	

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

ATTACHMENT B: PROJECT DESCRIPTION

1. **Event Center Description** - Please provide a detailed description of the major event center. At a minimum, provide the following information:

   a) General Characteristics of the Event Center, including type of venue, facility physical size, occupancy capacity, parking lot capacity, etc.;

   b) Average number of events held annually or during a full season of operation;

   c) Average attendance at a regularly scheduled event; peak attendance at special events;

   d) Traffic conditions in proximity to event center prior to, during, and following a regularly scheduled event. If possible, provide a statement from the City or County Traffic Engineering Department verifying that traffic volumes on adjacent roadways and intersections prior to and following a scheduled event exceed roadway and intersection capacity.

2. **Proposed Transportation Program Description** – Provide a detailed description of the proposed event center transportation program. This should include, at a minimum:

   a) A description of the vehicles proposed to perform transportation services, including the make and model, model year, engine model and year, alternative fuel type if required, seating positions, and total capacity (seated and standing) for each vehicle proposed to be utilized in event center transportation services.

   b) The estimated number of events for which transportation program will be implemented. Include event schedules, dates, etc. to the extent feasible.

   c) A description of how the transportation program services will be conducted, including passenger pickup locations, passenger drop-off locations, anticipated headways, hours of operation, etc.

   d) For circulator-type transportation services, please include a map of the vehicle route(s) that graphically illustrates vehicle routing, passenger pickup and drop-off locations, etc.

3. **Connectivity with Other Public Transit Service** - Please discuss potential connectivity with other public transit services, including but not limited to potential connectivity with existing regional or municipal bus lines, Metrolink, light rail, transit centers, park and ride lots, etc.

4. **Advertising, Marketing, Outreach, and Promotion of Event Center Transportation Program** – Please describe the plan for conducting outreach and promotion of the availability of event center transportation programs. This may include, but is not limited to, radio, television, newspaper, or specialty publication advertisements; other printed materials; materials developed for incorporation into a website, electronic media, etc., transportation program kickoff events, ribbon cuttings, or news conferences, etc. Please note that outreach and promotion is a mandatory element of any event center transportation program project funded by the MSRC and may be accounted for as an in-kind co-funding contribution.

5. **Program Continuation Plan** – Please describe what efforts will be made by the event center/transportation provider partnership to secure necessary resources to continue event center transportation program beyond the initial MSRC funding period.

ATTACHMENT C: COST BREAKDOWN: Please provide a detailed cost breakdown of the proposed project. Please note that MSRC **Clean Transportation Funding**™ is intended to help offset the cost of transportation program, and cannot be applied to capital equipment purchases or used to offset lost parking facility revenues. The MSRC reserves the right to exclude cost elements deemed unallowable, as well as award funding in an amount less than the requested amount.

ATTACHMENT D: PROJECT IMPLEMENTATION SCHEDULE

Please provide a Milestone Schedule for your proposed event center transportation program project. This should include, at a minimum, the anticipated date event center transportation program will commence, as well as any additional information regarding scheduled events to be supported by transportation services.

ATTACHMENT E: MEMORANDUM OF UNDERSTANDING/LETTER OF SUPPORT BETWEEN TRANSPORTATION SERVICE PROVIDER (PROPOSED CONTRACTOR) AND EVENT CENTER SITE

For projects seeking MSRC **Clean Transportation Funding**™ for implementation or expansion of an event center transportation program, a fully executed Memorandum of Understanding (MOU) or letter of support must be submitted as an element of the proposal package.

The MOU/Letter of Support must be provided at the time of Proposal Submittal and must contain the following essential elements, at a minimum:

- The parties to the MOU/Letter of Support, including the transportation service provider(s) and event center site owner or authorized representative;
- The term of the MOU/Letter of Support;
- The specific location of where transportation services will be provided;
- Anticipated dates of transportation service start of operation and completion;
- Executed signatures by individuals authorized on behalf of the parties to the MOU/Letter of Support.

If the proposal package contains a letter of support, an MOU may be required prior to execution of a contract.

ATTACHMENT F: TRANSPORTATION PROGRAM RIDERSHIP ESTIMATES

Please provide an estimate of the anticipated utilization of the event center transportation program if implemented as proposed. Please include any empirical information used to generate ridership estimates, including but not limited to survey results, focus group results, etc.

Please note that as a condition of funding award, the contractor will be required to survey, document, or otherwise quantify the patronage of the event center transportation program in order for the MSRC to quantify motor vehicle emission reductions achieved by the transportation program.

ATTACHMENT G: CERTIFICATIONS

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

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.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:
☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate
☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____
Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.
☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
Exempt payee code (if any) _____
Exemption from FATCA reporting code (if any) _____
(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) | Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally 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 *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number
___ - ___ - ____

or

Employer identification number
__ - _____

Part II Certification

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.

Certification instructions. 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.

Sign Here | **Signature of U.S. person** ▶ | **Date** ▶

General Instructions

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

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. 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. See *What is FATCA reporting?* on page 2 for further information.

Cat. No. 10231X — Form **W-9** (Rev. 12-2014)

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.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% 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* above.

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

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. 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 line 2.

e. **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 Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should 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 line 1. 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 line 2, "Business name/disregarded entity name." 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.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

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 U.S. commonwealth or possession, 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 U.S. commonwealth or possession

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[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] 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 reportable under section 6045(f), 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 requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

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 U.S. commonwealth or possession, 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 Regulations 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 Regulations 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

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

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 this page), 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 SSA office or get this form online at *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* 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 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 line 1 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[1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor[2]
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
5. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
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[4]
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 Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] 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.

[2] Circle the minor's name and furnish the minor's SSN.

[3] 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.

[4] 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 2.

*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, 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*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit 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.

YEAR

CALIFORNIA FORM

2015 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 _____

For Privacy Notice, get FTB 1131 ENG/SP. 7061153 Form 590 C2 2014

2015 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** 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** 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 partners, members, and S corporation shareholders 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 activities sourced to 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 before payment is made. 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

For California non-wage withholding purposes, **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.

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.

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**.

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**
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**
Teléfono: 800.852.5711 dentro de los Estados Unidos
916.845.6500 fuera de los Estados Unidos
TTY/TDD: 800.822.6268 para personas con discapacidades auditivas o del habla

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 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 SCAQMD website (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.

MSRC Prospective Contractor Information

1. Contractor (Legal Name): _____

2. Brief Description of Project: _____

3. Did Contractor retain a consultant to help prepare the funding application?

   ☐ Yes ☐ No **If YES, identify consultant below and then sign and date the form. If NO, sign and date below.**

   Name of Consultant _____

   I declare the foregoing disclosure to be true and correct.
   Name: _____

   Signature: _____

   Title: _____

   Date: _____

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

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.

_____ _____
A. NAME ***TITLE***

_____ _____
B. 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.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 15

PROPOSAL: Execute Contract for Renewable Natural Gas Commercial Field Test Project and Create Special Revenue Fund

SYNOPSIS: In conjunction with the Southern California Gas Company (SoCalGas), KORE Infrastructure, Inc., is proposing to conduct research and field tests on their full-scale modular biomethane production process. The proposed research project will utilize a fully integrated system to process biosolids into renewable natural gas (RNG), with a goal to optimize consistent operation that yields pipeline-quality gas capable of transmission into the SoCalGas pipeline system. These actions are to create a SoCalGas Settlement Special Revenue Fund and execute a contract with KORE Infrastructure, Inc., in an amount not to exceed $1 million from the SoCalGas Settlement Special Revenue Fund to cost-share the commercial field test project.

COMMITTEE: No Committee Review

RECOMMENDED ACTIONS:
1. Create the SoCalGas Settlement Special Revenue Fund; and
2. Authorize the Chairman to execute contract with KORE Infrastructure, Inc., to conduct a commercial field test project in an amount not to exceed $1 million from the SoCalGas Settlement Special Revenue Fund.

Wayne Nastri
Executive Officer

WN:MMM:FM:NB:PMB

Background

KORE Infrastructure, Inc., (KORE) has developed a proprietary process for converting biosolid wastes (biosolids) from waste water treatment plants into a solid (biochar) that can be used as soil amendment as well as a gas that can be converted and conditioned into a biofuel useable as a transportation fuel. Biosolids that are obtained from publicly owned treatment works, such as the Sanitation Districts of Los Angeles County (LACSD), would otherwise be used for agricultural land applications such as fertilizer.

KORE recently completed a six-year pilot program to demonstrate its technology at the LACSD facility in Carson. Following the successful completion of this pilot program, KORE began securing entitlements to operate a commercial-scale waste conversion facility in Rialto. KORE received approval for a Precise Plan of Design from the City of Rialto to develop a biosolids processing facility and recently obtained a Solid Waste Facilities Permit from the County of San Bernardino, Division of Environmental Health Services, as well as received concurrence for this permit from the Department of Resources Recycling and Recovery (CalRecycle) for an Engineered Municipal Solid Waste Conversion Facility and Transfer and Processing Facility at this location. In September 2016, SCAQMD approved cost-sharing this Rialto project in the amount of $2.5 million to produce renewable natural gas (RNG) suitable as a transportation fuel.

Proposal

The settlement agreement between SCAQMD and SoCalGas regarding the Aliso Canyon gas leak, dated February 7, 2017, included a provision under Section 3(a)(ii) that allocated $1 million of the settlement to KORE, provided that SCAQMD and KORE could enter into an appropriate grant agreement.

KORE has proposed using this funding to construct a commercial-scale demonstration project for its biosolids-to-natural-gas technology in the City of Los Angeles. The project is to optimize the commercial-scale level of KORE's technology, determine viability of alternative biowaste feedstocks using this technology, and demonstrate this technology's ability to produce commercially usable RNG suitable for pipeline injection. KORE's equipment will be installed and operated on SoCalGas property, with the goal of consistently producing pipeline-quality gas. SoCalGas is contributing up to $2.5 million towards the gas development and testing portion of this project. With results from this commercial field test, the construction and operation of the Rialto plant may be expedited. These projects have the potential to reduce the need for underground storage of natural gas by providing an on-demand supply of RNG directly into the pipeline.

These actions are to create the SoCalGas Settlement Special Revenue Fund and execute a contract with KORE Infrastructure, Inc., in an amount not to exceed $1 million from the SoCalGas Settlement Special Revenue Fund to cost-share the commercial field test project.

Sole Source Justification

Section VIII.B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. This request for sole source award is made under provision B.2.C, the project involves the use of proprietary technology and B.2.d, other circumstances exist which in the determination of the Executive Officer require such waiver in the best interest of the SCAQMD. Specifically, these circumstances are B.2.d.(1): Project involving cost-sharing by

multiple sponsors, with an estimated $6 million in total project costs, up to $2.5 million each from SoCalGas and KORE to fund the commercial field test project.

Benefits to SCAQMD

The South Coast Air Basin is classified as an "extreme" nonattainment area for ozone under the federal Clean Air Act. A wide-scale deployment of low NOx technologies, especially Class 6, 7 and 8 vehicles including transit buses, refuse trucks and drayage trucks, is a critical step toward achieving the air quality standards with considerable public health benefits for our region. When combined with RNG and the near-zero carbon footprint, these technologies are expected to provide a near-term, cost-effective option for addressing criteria pollutant and achieving greenhouse gas benefits. Ensuring greater supply of locally produced RNG will address local, state and federal environmental regulations and goals.

Resource Impacts

SCAQMD's total cost-share for the project with KORE will not exceed $1 million using funds from the SoCalGas Settlement Special Revenue Fund. Project development costs and funding sources for this project are as follows:

Proposed Project Development Costs

Funding Sources	Funding Amount	Percent
KORE	$2,500,000	42
SoCalGas	$2,500,000	42
SCAQMD (*requested*)	$1,000,000	16
Total	**$6,000,000**	**100**

Sufficient funds are available from the SoCalGas Settlement Special Revenue Fund.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 16

REPORT: Legislative, Public Affairs and Media Report

SYNOPSIS: This report highlights the January 2017 outreach activities of Legislative, Public Affairs and Media Office, which include: an Environmental Justice Update, Community Events/Public Meetings, Business Assistance, Media Relations and Outreach to Business and Federal, State, and Local Government.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

DJA:FW:MC:DM

BACKGROUND
This report summarizes the activities of Legislative, Public Affairs and the Media Office for January 2017. The report includes five major areas: Environmental Justice Update; Community Events/Public Meetings (including the Speakers Bureau/Visitor Services, Communications Center, and Public Information Center); Business Assistance; Media Relations, 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 January 2017. These events involve communities which suffer disproportionately from adverse air quality impacts.

January 5

- SCAQMD hosted the "Community Celebration of Environmental Justice Leaders," in the City of Commerce. The luncheon honored Monsignor John Moretta of Resurrection Church, and Angelo Logan from the Moving Forward Network. Governing Board Members Dr. Joseph Lyou and Judith Mitchell

attended the event, as did SCAQMD executive staff including Executive Officer Wayne Nastri. The event drew approximately 80 attendees, and was well received by community members who have benefited from the efforts of Monsignor Moretta and Mr. Logan.

January 18

- SCAQMD hosted the "Community Celebration of Environmental Justice Leaders," in San Bernardino, to honor Dr. Larry Beeson, and in memoriam, Dr. Samuel Soret, both of Loma Linda University. Governing Board Members Larry McCallon and Janice Rutherford attended. Attending the celebratory lunch were approximately 85 people, many of whom knew Dr. Soret before his passing. Dr. Soret's children accepted the award on his behalf, and delivered remarks about his accomplishments.

January 24

- Staff attended the San Pedro Bay Ports Clean Air Workshop to receive an update from Port staff on their efforts to clean the air. Multiple community group leaders also attended, many of whom voiced their concerns about the air pollution in the area. Sylvia Betancourt from the Long Beach Alliance for Children with Asthma (LBACA), requested that SCAQMD attend one of LBACA's meetings, to provide community members with an update on SCAQMD's ongoing clean air efforts.

January 26

- Staff attended the "Watts & South L.A. Clean Air Community Forum" at St. John's United Methodist Church, hosted by the Sierra Club. Staff provided an update to attendees on SCAQMD initiatives, including the Draft 2016 Air Quality Management Plan (AQMP). Participants expressed their desire to have more resources that help clean the air, including electric vehicle chargers and co-funding incentives for clean vehicles.

COMMUNITY EVENTS/PUBLIC MEETINGS

Each year SCAQMD staff engage with thousands of residents, providing valuable information about the agency, incentive programs, and ways individuals can help reduce air pollution through events and meetings sponsored solely by SCAQMD 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;
- SCAQMD incentive programs;
- 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 Martin Luther King Jr., Day of Service Forum, California Science Center, Los Angeles.

January 25

- SCAQMD held its fourth annual, "Martin Luther King Jr., Day of Service Forum," at the California Science Center in Los Angeles. The keynote speaker for the event was Maryum "May May" Ali who inspired the more than 400 attendees on ways to engage in their communities and to take part in clean air efforts.

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 20

- Thirty-five students and their teachers from Jones Junior High School in Baldwin Park visited SCAQMD. The visit included an overview on SCAQMD, air quality, clean alternative fuel vehicles, as well as a tour of the SCAQMD headquarters facility.

COMMUNICATION CENTER STATISTICS

The Communication Center handles calls on SCAQMD's main line, 1-800-CUT-SMOG® line, the Spanish line, and after-hours calls to each of those lines. Total calls received in the month of January were:

Calls to SCAQMD's Main Line and 1-800-CUT-SMOG® Line	3,640
Calls to SCAQMD's Spanish-language Line	56
Total Calls	3,696

PUBLIC INFORMATION CENTER STATISTICS

The Public Information Center (PIC) handles phone calls and walk-in requests for general information. Information for the month of Januaryis summarized below:

Calls Received by PIC Staff	141
Calls to Automated System	577
Total Calls	718
Visitor Transactions	222
E-Mail Advisories Sent	2,435

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:

- Provided permit application assistance to 170 companies
- Conducted 5 free on-site consultations
- Issued 21 clearance letters

Types of businesses assisted

Auto Body Shops	Dry Cleaners	Furniture Refinishing Facilities
Engineering Firm	Gas Stations	Auto Repair Centers
Construction Firm	Restaurants	Printing Facilities
Architecture Firm	Breweries	Manufacturing Facilities
Plating Facilities		

MEDIA RELATIONS

The Media Office handles all SCAQMD outreach and communications with television, radio, newspapers and all other publications and media operations.

Total Media Inquiries: 148

Major Media Topics for January:

- **Paramount Hexavalent Chromium** – Staff issued a news release on January 10 on the Order for Abatement adopted by the Hearing Board. Breaking news during the first week of January included stories regarding high levels of hexavalent chromium found on the roof of the Anaplex facility. Stories have continued to run in the Press-Telegram, KPCC News, and My News LA.

- **Odor Events in Huntington Beach, Long Beach, and Torrance –**The Press-Telegram investigated news of sulfurous odors allegedly from the Torrance refinery. Staff spoke with reporters to discuss any complaints which had been received, whether an inspector had been dispatched to the site, and whether a source was identified. A story ran in print on January 5. Odor events in Long Beach and Huntington Beach also prompted follow-up requests by local reporters. Stories ran in the Long Beach Report and Long Beach Post.

- **Asbestos Removal in Santa Monica:** The Santa Monica Daily Press requested further details on the status of asbestos cleanup at an apartment complex in Santa Monica. The paper ran two stories on the status of the asbestos cleanup, focusing on interviews with affected residents and the property owners. SCAQMD was mentioned, but not quoted, in the second of the two articles.

- **Aliso Canyon:** During the weekend of January 14 a possible off-gassing of natural deposits in the area prompted renewed media interest in Aliso Canyon, the status of the agreement between SoCalGas and SCAQMD, and related complaint activity. Staff participated in several interviews. The L.A. Daily News and KPCC ran stories.

- **2016 AQMP:** The L.A. Times, Riverside Press-Enterprise, KPCC, and the New York Times requested information regarding the AQMP. Topics of interest included funding, control measures, and business incentives. Staff was interviewed by all the news outlets mentioned above.

- **Hydrofluoric Acid: The** Center for Public Integrity (CPI) is interested in learning more about Proposed Rule 1410 on the use of hydrofluoric acid (HF) at refineries. CPI is partnering with KPCC on the story. Staff participated in an interview with both organizations on January 19. The Daily Breeze and KFI Radio interviewed staff in regards to the use of HF. A statement was also issued by Congressman Ted Lieu on his website. Stories were broadcast via radio.

Media Campaigns

- Check Before You Burn: Outreach on the Check Before You Burn (CBYB) program continued in January. To date, eight no-burn days have been called this season. Advertising on radio and cable channels is ongoing. Live no-burn day alerts were included in the radio campaign. AirAlerts.org website updated with

new graphic taken from new CBYB video. A pop-up banner is being used at community events staffed by Westbound Communications. The Orange County Register published a story on the program. Media coverage of no-burn days has consistently shown improved engagement from previous years, mostly in print media.

- Google Ad Campaign v2.0–Check Before You Burn: The Google advertising campaign featuring a CBYB advertisement was approved. Google is running the pre-roll videos for CBYB on YouTube. To date, the CBYB YouTube video has gained 2.8 million impressions.

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	Glendora	Mission Viejo
Anaheim	Hemet	Norco
Aliso Viejo	Industry	Pasadena
Arcadia	Indio	Paramount
Azusa	Irvine	Pomona
Baldwin Park	Irwindale	Rancho Santa Margarita
Beaumont	La Cañada	Riverside
Bradbury	La Habra	Rosemead
Brea	La Palma	San Dimas
Buena Park	La Puente	San Gabriel
Claremont	La Verne	San Marino
Commerce	Lake Elsinore	San Pedro
Covina	Laguna Hills	Sierra Madre
Cypress	Laguna Niguel	South El Monte
Dana Point	Los Angeles	South Pasadena
Diamond Bar	Long Beach	Temple City
Duarte	Monrovia	Upland
Eastavle	Moreno Valley	Walnut
El Monte	Montery Park	West Covina

Visits and/or communications were conducted with elected officials or staff from the following state and federal offices:

- Governor Edmund G. Brown, Jr.
- U.S. Congressman Pete Aguilar
- U.S. Congresswoman Judy Chu
- U.S. Congressman Lou Correa
- U.S. Congressman Mark Takano
- U.S. Congresswoman Mimi Walters
- State Senator Josh Newman
- State Senator Richard Roth
- Assembly Member Ed Chau
- Assembly Member Phillip Chen

- Assembly Member Stephen Choi
- Assembly Member Tom Daly
- Assembly Member Eduardo Garcia
- Assembly Member Chris Holden
- Assembly Member Jose Medina
- Assembly Member Melissa Melendez
- Asembly Member Sharon Quirk-Silva

Staff represented SCAQMD and/or provided updates or a presentation to the following governmental agencies and business organizations:

Anaheim Chamber of Commerce
Building Industry Association, Orange County
California Air Resources Board
California Governor's Office of Business and Economic Development
Department of Toxic Substances Control (DTSC)
Cabazon Band of Mission Indians
DTSC, Exide Advisory Group, Maywood
Coachella Valley Association of Governments
Coachella Valley Regional Water Control Board
Gateway Cities Council of Governments
Greater Riverside Chamber of Commerce
Inland Empire Jobs Corps, Muscoy Neighborhood, San Bernardino
Los Angeles Department of Water and Power
Los Angeles County Department of Consumer Business Affairs
Orange County Business Council
Orange County Council of Governments
Orange County Transportation Authority
Orange County Local Agency Formation Commission
Omnitrans, San Bernardino County
Pasadena Chamber of Commerce
Port of Los Angeles
Port of Long Beach
Regional Chamber of Commerce, San Gabriel Valley
Riverside Transit Agency (RTA)
San Bernardino Area Chamber of Commerce
San Bernardino Associated Governments
San Gabriel Valley Council of Governments
San Gabriel Valley Economic Partnership, Irwindale
San Jacinto Chamber of Commerce
South Orange County Economic Coalition
Southern California Association of Governments
Torres-Martinez Desert Cahuilla Indians
Twenty Nine Palms Band of Mission Indians
Upland Chamber of Commerce
U.S. Dept. of Health and Human Services

U.S. Green Building Council, Los Angeles Region
U.S Environmental Protection Agency, Region 9
Western Riverside County Transportation Now (RTA)
-Greater Riverside, Northwest, San Gorgonio Pass, Moreno Valley, Southwest, Hemet/San Jacinto, Chapters

Staff represented SCAQMD and/or provided updates or a presentation to the following community and educational groups and organizations:

Breathe California of Los Angeles County (Breathe LA)
Coachella Valley Environmental Task Force
Environmental Charter High School, Lawndale
Growing Coachella Valley Organization
Highland Park Senior Center
Jones Junior High School, Baldwin Park
Long Beach Alliance for Children with Asthma (LBACA)
Loma Linda University
Sierra Club, Los Angeles
St. John's Methodist Church, Los Angeles
Sunshine Canyon Landfill Community Advisory Committee, Granada Hills
University of California, Irvine (UCI)
University of California, Riverside (UCR)
University of Southern California (USC)

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 17

REPORT: Hearing Board Report

SYNOPSIS: This reports the actions taken by the Hearing Board during the period of January 1 through January 31, 2017.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file this report.

Edward Camarena
Chairman of Hearing Board

DG

Two summaries are attached: **Rules From Which Variances and Orders for Abatement Were Requested in 2017** and **January 2017 Hearing Board Cases**.

The total number of appeals filed during the period January 1 to January 31, 2017 is 0.

Rules from which Variances and Orders for Abatement were Requested in 2017													
	2017	***Jan***	***Feb***	***Mar***	***Apr***	***May***	***Jun***	***Jul***	***Aug***	***Sep***	***Oct***	***Nov***	***Dec***	***Total Actions***
# of HB Actions Involving Rules													
203(a)		1											1
203(b)		6											6
402		2											2
1110.2		1											1
1110.2(d)(1)(B), Table II		1											1
1147		1											1
1176(e)(3)		1											1
1176(f)(3)		1											1
2004(f)(1)		6											6
3002(c)(1)		3											3
3003(i)(2)(E)		1											1
H&S 41700		2											2

Report of January 2017 Hearing Board Cases

Case Name and Case No. (SCAQMD Attorney)	Rules	Reason for Petition	District Position/ Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
1. Beta Offshore Case No. 5855-5 (S. Hanizavareh)	203(b) 1110.2(d)(1)(B), Table II 2004(f)(1) 3002(c)(1)	West crane ICE on offshore platform failed VOC test.	Not Opposed/Granted	RV granted commencing 1/25/17 and continuing through 9/15/17, the FCD.	VOC: 0.02 lb/day
2. Chevron Products Company Case No. 831-385 (N. Sanchez)	203(b) 2004(f)(1) 3002(c)(1)	Total sulfur analyzer failed.	Not Opposed/Granted	Ex Parte EV granted commencing 1/31/17 and continuing for 30 days or until the EV hearing currently scheduled for 2/9/17, whichever comes first.	None
3. Phillips 66 Company Case No. 4900-102 (T. Barrera)	203(b) 2004(f)(1) 3002(c)(1)	Permit condition prohibits steam injection for NOx control on ultra-low NOx burners in crude heater.	Not Opposed/Granted	SV granted commencing 1/19/17 and continuing through 4/18/17, or until final compliance is achieved, whichever comes first.	None
4. SCAQMD vs. Aerocraft Heating Co., Inc.; Anaplex Corp.; and Does 1-100 Case No. 6066-1 (W. Wong & K. Wiese)	402 H&S §41700	Hexavalent chrome emissions near sensitive receptors.	Stipulated/Issued	O/A issued against Anaplex Corp. commencing 1/10/17; the Hearing Board shall retain jurisdiction over this matter until 12/31/18.	N/A
5. SCAQMD vs. Anita's Mexican Foods Corp. Case No. 6017-2 (N. Feldman)	203(a) 1147	Deep fat fryer with ESP and RTO operating without permit pending rule change.	Stipulated/Issued	Mod. O/A issued commencing 1/25/17; the Hearing Board shall retain jurisdiction over this matter until 10/31/17.	N/A
6. SCAQMD vs. MM Lopez Energy LLC Case No. 4910-3 (S. Hanizavareh & D. Hsu)	1110.2	Respondent operates two landfill gas-fired ICEs exceeding NOx limits.	Stipulated/Issued	O/A issued commencing 1/26/17 and continuing through 7/14/17. The Hearing Board shall retain jurisdiction over this matter until 1/26/18.	N/A
7. SCAQMD vs. Southern California Gas Company Case No. 137-76 (N. Feldman)	402 H&S §41700	Extension of Hearing Board's time of jurisdiction.	Not Stipulated/Issued	Mod. O/A issued commencing 1/18/17; the Hearing Board shall retain jurisdiction over this matter through 9/30/17.	N/A

Case Name and Case No. (SCAQMD Attorney)	Rules	Reason for Petition	District Position/ Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
8. Torrance Refining Company LLC Case No. 6060-7 (N. Sanchez)	203(b) 1176(e)(3) 1176(f)(3) 2004(f)(1)	Rain induced sinkhole caused break in underground waste water line.	Not Opposed/Granted	Ex Parte EV granted commencing 1/31/17 and continuing for 30 days or until the EV hearing currently scheduled for 2/8/17, whichever comes first.	None
9. University of California, Irvine Case No. 4297-4 (K. Manwaring)	203(b) 2004(f)(1)	Urea heater failed, rendering SCR inoperative, NOx limit exceeded.	Not Opposed/Granted	Ex Parte EV granted commencing 1/10/17 and continuing for 30 days or until the IV hearing currently scheduled for 1/12/17, whichever comes first.	NOx: 34.5 lbs/day
10. University of California, Irvine Case No. 4297-4 (M. Reichert)	203(b) 2004(f)(1)	Urea heater failed, rendering SCR inoperative, NOx limit exceeded.	Not Opposed/Granted	IV granted commencing 1/12/17 and continuing for 90 days or until the SV hearing currently scheduled for 2/8/17, or until final compliance is achieved, whichever comes first.	NOx: 34.5 lbs/day

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
ESP: Electrostatic Precipitator
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

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 18

REPORT: Civil Filings and Civil Penalties Report

SYNOPSIS: This reports the monthly penalties from January 1 through January 31, 2017, and legal actions filed the General Counsel's Office from January 1 through January 31, 2017. An Index of District Rules is attached with the penalty reports.

COMMITTEE: Stationary Source, February 17, 2017, Reviewed

RECOMMENDED ACTION:
Receive and file this report.

Kurt R. Wiese
General Counsel

KRW:lc

No Civil Filings

Attachments
January 2017 Penalty Reports
Index of District Rules and Regulations

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
General Counsel's Office

January 2017 Settlement Penalty Report

Total Penalties

Civil Settlements:	**$404,149.45**
MSPAP Settlements:	**$21,814.00**
Total Cash Settlements:	**$425,963.45**
Total SEP Value:	**$0.00**
Fiscal Year through 1 / 2017 Cash Total:	**$2,127,994.65**
Fiscal Year through 1 / 2017 SEP Value Only Total:	**$10,500.00**

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
Civil Settlements						
175226	ANITA'S MEXICAN FOOD CORPORATION	202 42401 42402	1/11/2017	BTG	P62046 P62047	$100,000.00
122861	B & M TEAR OFF	1403	1/5/2017	RRF	P53087	$5,000.00
800181	CALIFORNIA PORTLAND CEMENT CO	203(a) 203(a)	1/19/2017	NSF	P59274 P59275	$30,000.00
155587 177679	B & D CONSTRUCTION CO, INC COMSTOCK GAGE LLC	1150 1150	1/18/2017	TRB	P49168 P49169	$2,500.00
117225	EQUILON ENTER. LLC, SHELL OIL PROD. U S	462	1/5/2017	BTG	P59378	$10,000.00
178389	FANTASY GRANITE	403	1/17/2017	MJR	P58279	$1,000.00
157359	HENKEL ELECTRONIC MATERIALS, LLC	2004(f)(1) 3002(c)(1)	1/24/2017	NSF	P57871	$17,500.00
172755	MARTIN ENTERPRISES	3002	1/26/2017	VKT	P64354	$500.00
12372	MISSION CLAY PRODUCTS	2012 2004	1/23/2017	SH	P57869 P60558	$3,000.00
114997	RAYTHEON COMPANY	2004	1/12/2017	WBW	P60566	$1,700.00
170855	WALMART	1143	1/17/2017	WBW	P60341	$52,949.45

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
178832	WEST MARINE	1106.1 1113 1143		BTG	P61805	$180,000.00

Total Civil Settlements: $404,149.45

MSPAP Settlements

110411	ARCO DLR, G & H GAS STATION	461(E)(2)(A)	1/10/2017	GC	P64322	$300.00
167341	AVENUE 64 FUEL SERVICE	203 (b)	1/3/2017	JS	P64266	$770.00
44374	CHEVRON DLR, MARWAN JIZRAWI DBA	203 (a)	1/3/2017	JS	P63216	$600.00
169471	CIRCLE K STORES INC., HWMH, INC. SITE 22	203 (b) 41960.2 461(c) 461(c)(2)(B)	1/18/2017	JS	P63044	$5,400.00
68042	CORONA ENERGY PARTNERS, LTD	2004(f)(1) 201 3002	1/26/2017	JS	P64407	$1,100.00
173672	EZ FUEL AND EZ FOOD MART NAEEM ULLAH KHA	203	1/10/2017	GC	P36743	$344.00
150573	LUIS BODY SHOP	109, 203	1/25/2017	TF	P63663	$750.00
120149	NICKEY PETROLEUM, NICKEY CARD LOCK, DBA	461(E)(2)(A)	1/25/2017	TF	P64332	$1,100.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
170305	PROPEL FUELS	203 (b)	1/26/2017	TF	P61997	$4,000.00
170305	PROPEL FUELS	203 (b)	1/26/2017	TF	P64953	$500.00
137099	RD 786, INC.	203 (b) 203 (b), 461	1/18/2017	TF	P60085 P63059	$2,250.00
150075	RIVERGRADE SERVICE STATION, LP	461(E)(2)(A)	1/3/2017	TF	P64292	$1,650.00
164420	SANTA MONICA SHELL	461(c)(2)(B)	1/3/2017	TF	P60088	$1,050.00
63249	THE VONS CO INC	1146 203(b)	1/18/2017	GV	P60528	$1,700.00
155393	WEST HILLS 76	41960.2 461(c)	1/3/2017	GV	P64902	$300.00

Total MSPAP Settlements: $21,814.00

DISTRICT RULES AND REGULATIONS INDEX
FOR DECEMBER 2016 PENALTY REPORTS

REGULATION I - GENERAL PROVISIONS

Rule 109 Recordkeeping for Volatile Organic Compound Emissions *(Amended 8/18/00)*

REGULATION II – PERMITS

Rule 201 Permit to Construct *(Amended 1/5/90)*
Rule 202 Temporary Permit to Operate *(Amended 5/7/76)*
Rule 203 Permit to Operate *(Amended 1/5/90)*

REGULATION IV - PROHIBITIONS

Rule 403 Fugitive Dust *(Amended 12/11/98) Pertains to solid particulate matter emitted from man-made activities.*
Rule 461 Gasoline Transfer and Dispensing *(Amended 6/15/01)*
Rule 462 Organic Liquid Loading

REGULATION XI - SOURCE SPECIFIC STANDARDS

Rule 1106.1 Pleasure Craft Coating Operations
Rule 1113 Architectural Coatings
Rule 1143 Consumer Paint Thinners and Multi-Purpose Solvents
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 1150 Excavation of Landfill Sites

REGULATION XIV – TOXICS

Rule 1403 Asbestos Emissions from Demolition/Renovation Activities

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_X) 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
42401	Violation of Order for Abatement
42402	Violation of Emission Limitations – Civil Penalty

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 19

REPORT: Lead Agency Projects and Environmental Documents Received By SCAQMD

SYNOPSIS: This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between January 1, 2017 and January 31, 2017, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, February 17, 2017, Reviewed

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

PF:SN:JW:LS:LW

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 January 1, 2017 through January 31, 2017 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 in Attachment B. A total of 72 CEQA documents were received during this reporting period and 39 comment letters were sent. Notable projects in this report are Port of Long Beach's Pier B On-Dock Rail Support Facility Project and San Gorgonio Crossings Warehouse Project.

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 Environmental Justice Initiative #4. Furthermore, as required by the Environmental Justice Program Enhancements for FY 2002-03 approved by the Board in October 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 by submitting newspaper articles. The attachments also identify for each project the dates of the public comment period and the public hearing date, if applicable, 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." If there is no notation, then SCAQMD staff did not provide testimony at a hearing for the proposed project.

During the period January 1, 2017 through January 31, 2017, the SCAQMD received 72 CEQA documents. Of the total of 90 documents* listed in Attachments A and B:

- 39 comment letters were sent;
- 16 documents were reviewed, but no comments were made;
- 26 documents are currently under review;
- 1 documents did not require comments (e.g., public notices, plot plans, Final Environmental Impact Reports);
- 0 documents were not reviewed; and
- 8 documents were screened without additional review.

* These statistics are from January 1, 2017 to January 31, 2017 and may 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.

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. As noted in Attachment C, the SCAQMD continued working on the CEQA documents for five 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 01, 2017 to January 31, 2017

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Goods Movement **LAC170127-01** Pier B On-Dock Rail Support Facility Project	The proposed project consists of the reconfiguration and expansion of the Pier B On-Dock Rail Support Facility which actions are to: (a) provide a sufficient facility to accommodate the expected demand of cargo to be moved via on-dock rail into the foreseeable future; (b) maximize on-dock intermodal operations to reach the long-term goal of 30 to 35 percent of cargo containers to be handled by on-dock rail; (c) provide a facility that can accept and handle longer container trains; and (d) provide a rail yard that is cost effective and fiscally prudent. The proposed project site is located in two Planning Districts (the Northeast Harbor and North Harbor), and includes the Wilmington-Harbor City Community Plan Area of the City of Los Angeles. Reference LAC 161216-06 Comment Period: 1/27/2016 - 3/13/2017 Public Hearing: 2/15/2017	Notice of Availability of a Draft Environmental Impact Report	Port of Long Beach	Under review, may submit written comments
Warehouse & Distribution Centers **RVC170104-01** MA16178/CUP16010/SDP16016	The proposed project consists of the construction of a 31,660-square-foot warehouse on 5.28 acres. The project is located at 4788 Brookhollow Circle at the end of the street near a cul-de-sac. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCma16178-011117.pdf Comment Period: 12/29/2016 - 1/12/2017 Public Hearing: N/A	Initial Project Consultation	City of Jurupa Valley	SCAQMD staff commented on 1/11/2017
Warehouse & Distribution Centers **RVC170124-05** Trucking Distribution Center (Pre-Application Review No. 1515)	The proposed project consists of the development of a trucking distribution center, which will include a loading dock, main office, parking lot landscape, and stormwater facilities on 19.19 acres. The project is located north of Placentia Avenue, east of West Frontage Road, west of Harvill Avenue, and south of Rider Street. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCtrucking-distrib013017.pdf Comment Period: 1/17/2017 - 2/9/2017 Public Hearing: N/A	Initial Project Consultation	County of Riverside	SCAQMD staff commented on 1/30/2017
Warehouse & Distribution Centers **RVC170125-02** Duke Warehouse	The proposed project consists of the development of a warehouse building encompassing 668,681 square feet on 31 acres. The project is located on the southwest corner of Markham Street and Indian Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPdukewarehouse012717.pdf Comment Period: 1/25/2017 - 2/23/2017 Public Hearing: 2/15/2016	Notice of Preparation	City of Perris	SCAQMD staff commented on 1/27/2017

**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.

Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 01, 2017 to January 31, 2017

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Warehouse & Distribution Centers **RVC170125-04** San Gorgonio Crossings, 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 two industrial buildings totaling 2,560,000 square feet on 246.5 gross acres. The project is located north of Cherry Valley Boulevard, east of Interstate 10 and west of Vineland Street. Reference RVC150113-01, RVC161129-06 Comment Period: N/A Public Hearing: N/A	Technical Data	County of Riverside	Preparing written comments
Warehouse & Distribution Centers **SBC170112-10** Bloomington Business Center	The proposed project consists of a General Plan Amendment to change the existing land use designation from Bloomington/Residential to Bloomington/Community Industrial on approximately 17.34 acres. The project would include the development of a 344,000-square-foot high cube industrial warehouse and associated facilities and improvements. The project is located on the southwest corner of Slover Avenue and Locust Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPbloomington012017.pdf Comment Period: 1/12/2017 - 2/10/2017 Public Hearing: 1/25/2017	Notice of Preparation	County of San Bernardino	SCAQMD staff commented on 1/20/2017
Warehouse & Distribution Centers **SBC170120-02** Hickory Warehouse	The proposed project consists of the construction of a concrete tilt-up warehouse building totaling 215,600 square feet on 9.5 acres. The project is located on the northwest corner of Hickory Avenue and Arrow Route. Comment Period: 1/17/2017 - 2/22/2017 Public Hearing: 2/22/2017	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Rancho Cucamonga	Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
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ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 01, 2017 to January 31, 2017

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Airports **LAC170127-03** LAX Landside Access Modernization Program (LAMP)	The proposed project consists of improvements in an area generally bounded by Tom Bradley International Terminal in the Central Terminal Area of LAX on the west, Interstate 105 on the south, Interstate 405 on the east, and Westchester Parkway/West Arbor Vitae Street on the north. The proposed improvements include (1) an elevated, 2.25-mile Automated People Mover System; (2) two intermodal transportation facilities with parking areas allowing for a drop-off and pick-up area; (3) a comprehensive series of roadway improvements; and (4) connection to Metro's proposed Airport Metro Connector Station. Reference LAC160915-13 and LAC150206-04 Comment Period: N/A Public Hearing: 2/2/2017	Notice of Public Hearing	Los Angeles World Airports	Document does not require comments
Industrial and Commercial **LAC170103-04** LA Fitness Health Club	The proposed project consists of the construction of a 37,000-square-foot single-story private health club on an existing parking lot. Access improvements would include extending the existing left-turn pocket on northbound Seal Beach Boulevard into Rossmoor Center Way. The project is located at 12311 Seal Beach Boulevard, on the southwest corner of Rossmoor Center Way and Seal Beach Boulevard. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPlafitness010917.pdf Comment Period: 12/29/2016 - 1/30/2017 Public Hearing: N/A	Notice of Preparation	City of Seal Beach	SCAQMD staff commented on 1/10/2017
Industrial and Commercial **LAC170106-02** Continental Grand Campus Specific Plan	The proposed project consists of the demolition of the existing 57,082-square-foot building and the construction of a 14-story office building that would measure approximately 328,612 gross square feet, and an eight-level parking structure. Approximately 219,870 net square feet would be used for office space and approximately 73,290 net square feet would be used for design and development. The remaining 35,452 net square feet would be distributed throughout the 14-story building and would consist of stairwells, elevators, storage closets, restrooms, and mechanical rooms. The project is approximately 12.5 acres and consists of three parcels located at 333 Continental Boulevard, 455-475 Continental Boulevard, and 1955 Grand Avenue, on the northwest corner of East Grand Avenue and Continental Boulevard. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPcontinentalgrand012017.pdf Comment Period: 1/5/2017 - 2/6/2017 Public Hearing: 1/26/2017	Notice of Preparation	City of El Segundo	SCAQMD staff commented on 1/20/2017

- Project has potential environmental justice concerns due to the nature and/or location of the project.
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ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 01, 2017 to January 31, 2017

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Industrial and Commercial **LAC170106-03** 9000 Wilshire Boulevard Commercial Project	The proposed project consists of the demolition of two commercial buildings and construction of a 31,702-square-foot commercial office building with subterranean parking. The project site is located on the southwest corner of Wilshire Boulevard and South Almont Drive. Reference LAC160802-13 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/DEIR9000wilshire012017.pdf Comment Period: 1/6/2017 - 2/20/2017 Public Hearing: 1/26/2017	Notice of Availability of a Draft Environmental Impact Report	City of Beverly Hills	SCAQMD staff commented on 1/19/2017
Industrial and Commercial **LAC170112-02** Goodyear Airship Operations Center Improvements Project	The proposed project consists of modifications to the existing 4,070-square-foot administration building, expansion of the Mooring area from approximately 41,500 square feet to approximately 195,000 square feet. The project upgrade would include: a 40,000-foot inflatable hangar and 105,000 foot tarmac for hangar entry/exit; a Polyethylene decking hangar floor with a secondary containment liner of methane control; a prefabricated, relocatable building for hazardous materials storage; a 4,500-foot inflatable maintenance building to house ground support equipment. The project is located at 19200 S. Main Street, east of the corner of South Broadway and South Main Street. Comment Period: 1/11/2017 - 2/9/2017 Public Hearing: 2/14/2017	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Carson	Document reviewed - No comments sent
Industrial and Commercial **LAC170112-06** Crossroads Hollywood (ENV-2015-2026-EIR)	The proposed project consists of the redevelopment of a mixed-use development consisting of approximately 1,432,000 square feet of floor area with 950 residential units, 308 hotel rooms, approximately 95,000 square feet of office uses, and approximately 185,000 square feet of commercial/retail uses. The applicant is electing to proceed under Chapter 6.5 of the Public Resources Code. Reference LAC151023-03 Comment Period: N/A Public Hearing: N/A	Notice of Environmental Leadership Development Project (ELDP)	City of Los Angeles	Document reviewed - No comments sent
Industrial and Commercial **LAC170119-05** Plaza At Santa Monica Project	The proposed project consists of the demolition of all existing on-site uses and the construction of a 357,000-square-foot mixed-use building comprised of a series of interconnecting bars. The project site is bounded by Arizona Avenue to the north, 4th Street to the west, and 5th Street to the east. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPplazaatsantamonica012517.pdf Comment Period: 1/16/2017 - 2/16/2017 Public Hearing: 1/30/2017	Notice of Preparation	City of Santa Monica	SCAQMD staff commented on 1/25/2017

- Project has potential environmental justice concerns due to the nature and/or location of the project.
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ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 01, 2017 to January 31, 2017

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Industrial and Commercial **RVC170103-02** Plot Plan No. 25714 (Riverside County Ordinance No. 348)	The proposed project consists of the construction and operation of a private outdoor motorcycle test track facility, not open for public use and viewing, including a 2,160-square-foot two-story motorcycle maintenance building. The project is located on Sky Canyon Drive between Technology Drive to the north, Borel Road to the south, and 0.18 mile east of Highway 79. Comment Period: 1/3/2017 - 1/23/2017 Public Hearing: 1/23/2017	Notice of Intent to Adopt a Negative Declaration	County of Riverside	Document reviewed - No comments sent
Industrial and Commercial **RVC170112-08** North Village Center Zone Change	The proposed project consists of a change of zone from Highway Commercial to Manufacturing, which will allow the existing buildings to be leased out to businesses that operate under industrial uses. The project site is approximately 13.3 acres. Comment Period: 1/11/2017 - 1/31/2017 Public Hearing: 1/25/2017	Notice of Intent to Adopt a Negative Declaration	City of Palm Springs	Document reviewed - No comments sent
Industrial and Commercial **SBC170105-01** Mitsubishi Cement Corporation South Quarry Project	The proposed project consists of the development and reclamation of a new high-grade limestone quarry to the south of the existing East Pit, the West Pit (under development) and the existing Cushenbury Cement Plant. The project would total 153.6 acres consisting of a 128-acre quarry, a 2.7-acre landscape berm, a 22.2-acre haul road 1.8 miles in length and a temporary construction road. The project is located approximately 6 miles south of the community of Lucerne Valley. Comment Period: 12/19/2016 - 2/1/2017 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	County of San Bernardino	Under review, may submit written comments
Waste and Water-related **LAC170118-02** Former Cogen Landfill Gas Extraction System and Monitoring Plan Project	The proposed project consists of the installation and operation of a landfill gas (LFG) Extraction System, the installation of two monitoring wells, and subsequent monitoring of LFG emissions. The project is located at 1175 Sheriff Road in the City of Monterey Park, north of the Sheriff Road and McBride Avenue intersection. Comment Period: 1/17/2017 - 2/15/2017 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	Los Angeles County	Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 01, 2017 to January 31, 2017

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **LAC170119-04** Pond 1 Closure Plan (Phibro-Tech, Inc.)	The proposed project consists of a Notice of Final Hazardous Waste Facility Permit Decision to Approve a Class 2 Permit Modification Request. The proposed project authorizes Phibro-Tech to continue to operate the hazard waste facility with modifications, including on-site replacement to a different location (by new tanks) and removal or demolition of four waste water tanks and related ancillary equipment. The project site is located at 8851 Dice Road in the City of Santa Fe Springs, County of Los Angeles. Reference LAC160609-01 and LAC151215-02 Comment Period: 1/17/2017 - 2/16/2017 Public Hearing: N/A	Notice of Final Hazardous Waste Facility Permit	Department of Toxic Substances Control	Document reviewed - No comments sent
Waste and Water-related **LAC170124-07** Ramirez Street Area (former Aliso Street Manufacturing Gas Plant Site)	The proposed project consists of an environmental cleanup to remove soil that could be a source of contamination to groundwater at the Ramirez Street Area. The Ramirez Street area is approximately 500 feet long and includes an approximate 400-foot stretch of Ramirez Street east of Center Street, and approximately 100-foot stretch of the southern portion of Keller Street in the City of Downtown Los Angeles. Reference LAC150219-08 Comment Period: 1/19/2017 - 2/21/2017 Public Hearing: 1/27/2016	Community Notice	Department of Toxic Substances Control	Document reviewed - No comments sent
Waste and Water-related **LAC170125-03** Former Industrial Zinc Plating Facility (Draft Corrective Measures Study)	The proposed project consists of a plan to clean up contaminated soil and groundwater at the former Industrial Zinc Plating facility. The two-acre project site is located at 3200 East 29th Street, near Redondo Avenue and E. 29th Street in the City of Long Beach. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/otherformerindzinc012717.pdf Comment Period: 1/23/2017 - 2/24/2017 Public Hearing: N/A	Notice of Public Comment	Department of Toxic Substances Control	SCAQMD staff commented on 1/27/2017
Waste and Water-related **LAC170127-05** Malibu Creek Ecosystem Restoration Project	The proposed project consists of restoring aquatic and riparian habitat connectivity along Malibu Creek and tributaries, establishing a more natural sediment regime from the watershed to the shoreline, and restoring aquatic and riparian habitat of 15 miles along Malibu Creek and tributaries. The project is located southwest of the Mulholland Highway and Las Virgenes Road intersection. Comment Period: 1/27/2017 - 3/27/2017 Public Hearing: 3/1/2017	Feasibility Study	California Department of Parks and Recreation	Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

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SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Waste and Water-related **ORC170117-08** Eastern Irrigation Water System Project	The proposed project consists of an eight-inch connection from an existing, buried groundwater conveyance pipeline to above grade piping at an existing well facility located 380 feet east of La Novia Avenue and 140 feet south of Calle Arroyo. The project will allow the City to convey blended water from its point of delivery to the existing lakes located on the north side of San Juan Creek Road, one half mile southwest of La Novia Avenue. Comment Period: 1/17/2017 - 2/15/2017 Public Hearing: N/A	Notice of Intent to Adopt a Negative Declaration	City of San Juan Capistrano	Document reviewed - No comments sent
Waste and Water-related **ORC170124-06** Reach 9 Phases 5A Embankment Protection Feature of the Santa Ana River Mainstem Project	The proposed project consists of adding 0.28 acres to the temporary construction easement towards the downstream extent of the embankment protection feature to accommodate dewatering, and back-cut and associated shoring needed to complete construction of the embankment protection feature. The project area is within the Santa Ana River, downstream of Prado Dam, in the City of Yorba Linda, Orange County. Reference ORC160712-03, ORC151110-05 and ORC150203-12 Comment Period: 1/20/2017 - 2/5/2017 Public Hearing: N/A	Supplemental Environmental Impact Report	United States Army Corps of Engineers	Document reviewed - No comments sent
Waste and Water-related **SBC170112-11** Modification of Underground Storage Tank System Located at 4702 Riverside Drive, Chino (FA#0001095, SR#0123938, LOG#122216-10)	The proposed project consists of a modification of an underground storage tank system. The project plans to excavate in front of the vent box to expose piping and penetrations, remove brine from interstitial space in vent box, install new Bravo double-walled penetrations, and repair piping if applicable. The project is located at 4702 Riverside Drive in the City of Chino, on the northeast corner of Yorba Avenue and Riverside Drive. Comment Period: N/A Public Hearing: N/A	Work Plan	San Bernardino County Fire Protection District	Document reviewed - No comments sent

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 01, 2017 to January 31, 2017

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Utilities **LAC170117-01** Inglewood Oil Field Specific Plan Project	The proposed project consists of updating and superceding the City's existing oil drilling regulations to establish safeguards and controls for activities related to drilling for and production of oil, gas, and other hydrocarbon substances within the City including, but not limited to: 1) compatibility with adjacent land uses; 2) cooperation and coordination with agencies to implement reasonable measures to reduce impacts to surrounding communities and emergency response; 3) minimization or elimination of potential adverse impacts by implementing area-specific regulations and mitigation measures; 4) ensuring oil field activities are in compliance with requirements of the Specific Plan; 5) minimization of oil field emergencies; 6) enhancement of the appearance of the oil field with landscaping and other property maintenance requirements; and 7) ensuring that new applications for oil and gas Drilling Use Permits address the consolidation of oil field facilities. The project is bound approximately by La Cienega Boulevard to the east, the City of Culver City/Los Angeles County border to the south, Culver City Park and College Boulevard to the west, and the Blair Hills residential area of the City to the north within Culver City and the unincorporated area of Los Angeles County known as Baldwin Hills. Reference LAC151008-17 Comment Period: N/A Public Hearing: 1/23/2017	Draft Environmental Impact Report	City of Culver City	Document reviewed - No comments sent
Utilities **RVC170124-01** Riverside Transmission Reliability Project	The proposed project consists of: 1) the construction of two miles of 230-kV underground double-circuit duct bank; 2) refinements to the proposed overhead 230-kV transmission line and route; 3) relocation of existing overhead distribution lines or a different overhead location to accommodate the new 230-kV transmission line; and 4) temporary use of two marshalling yards to store construction materials. The project is bordered to the north by State Route 60 and existing Mira Loma - Vista transmission lines and west by Interstate 15 within the cities of Jurupa Valley, Norco, and Riverside. Reference RVC150512-02 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPriverside-trans013017.pdf Comment Period: 1/25/2017 - 2/24/2017 Public Hearing: 2/8/2017	Notice of Preparation of a Subsequent Environmental Impact Report	Public Utilities Commission	SCAQMD staff commented on 1/30/2017

- Project has potential environmental justice concerns due to the nature and/or location of the project.
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ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
January 01, 2017 to January 31, 2017

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Transportation **LAC170112-13** West Carson Transit Oriented District Specific Plan, Plan Number RPPL2015000153	The proposed project consists of a transit oriented district specific plan that would develop up to 3,575 residential units and 4.6 million square feet of non-residential land uses and the relocation of the Carson Station of the Metro Silver Line express bus line to a new location on the I-110. The project is located in the unincorporated community of West Carson. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPw-carson012017.pdf Comment Period: 1/17/2017 - 2/17/2017 Public Hearing: 2/1/2017	Notice of Preparation	County of Los Angeles	SCAQMD staff commented on 1/20/2017
Transportation **ORC170112-04** Tustin Street and Katella Avenue Intersection Right Turn Lane and Bus Turnout Project (ENV 1851-16)	The proposed project consists of improvements and construction to the Tustin Street and Katella Avenue intersection, including a dedicated right turn lane from southbound Tustin Street to westbound Katella Avenue and a bus turnout on Katella Avenue. Comment Period: 1/11/2017 - 1/30/2017 Public Hearing: 2/14/2017	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Orange	Document reviewed - No comments sent
Transportation **ORC170112-05** Tustin Street and Chapman Avenue Intersection Right Turn Lane Project (ENV 1852-16)	The proposed project consists of improvements to the Tustin Street and Chapman Avenue intersection, including a dedicated right turn lane from southbound Tustin Street to west bound Chapman Avenue. Comment Period: 1/11/2017 - 1/30/2017 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Orange	Document reviewed - No comments sent
Transportation **ORC170117-09** Eastbound SR-22	The proposed project consists of a safety project along a portion of State Route 22 from Beach Boulevard to the connector with Interstate 5/State Route 57 by removing a portion of the existing collector-distributer road concrete barrier and relocating the point of divergence further eastward to the North Bristol Street interchange, reconfiguring the eastbound SR-22 mainline freeway, and widening the State Route 22 eastbound connector to northbound I-5/northbound State Route 57 to add one lane. Comment Period: 1/17/2017 - 2/16/2017 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	California Department of Transportation	Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.
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SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Transportation **RVC170112-03** I-15/Railroad Canyon Road Interchange Improvement Project	The proposed project consists of improvements to the Interstate 15/Railroad Canyon Road interchange and the construction of a new interchange 0.22 miles north of the existing Interstate 15/Franklin Street overcrossing. Comment Period: 1/12/2017 - 2/13/2017 Public Hearing: 2/1/2017	Notice of Availability of a Draft Environmental Assessment	City of Lake Elsinore	Document reviewed - No comments sent
Institutional (schools, government, etc.) **LAC170112-16** ENV-2016-260: 5762 N. Fallbrook Avenue	The proposed project consists of the conditional use of a daycare/preschool facility and a 971.5-square-foot increase in floor area from 2,152 to 3,123.5 square feet. The project is located on the southeast corner of Fallbrook Avenue and Hatteras Street. Comment Period: 1/12/2017 - 2/1/2017 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	Document reviewed - No comments sent
Institutional (schools, government, etc.) **LAC170117-02** Department of Veterans Affairs - Riverside National Cemetery Expansion	The proposed project consists of the future expansion of the existing Riverside National Cemetery on approximately 314 acres. The project is located at 16700 Village West Drive in an unincorporated area of Riverside County, southwest of Van Buren Boulevard and the Interstate 215 intersection. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCriversidecemetery020817.pdf Comment Period: 1/13/2017 - 2/10/2017 Public Hearing: N/A	Notice of Preparation	United States Department of Veterans Affairs	SCAQMD staff commented on 2/8/2017
Medical Facility **RVC170106-01** MA16210 (SDP16037,CUP16014)	The proposed project consists of the construction of a 39,917-square-foot, one-story, medical clinic on four acres. The project is located at the southwest intersection of Mission Boulevard and Pedley Road, and immediately to the west at 8876 Mission Boulevard. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCma16210-011117.pdf Comment Period: 12/14/2016 - 1/9/2017 Public Hearing: N/A	Initial Project Consultation	City of Jurupa Valley	SCAQMD staff commented on 1/11/2017

- Project has potential environmental justice concerns due to the nature and/or location of the project.
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ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
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SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Medical Facility **RVC170124-04** Plot Plan No. 26097 Fast Track No. 2016-06-EA42803	The proposed project consists of the construction of a 96,352-square-foot ambulatory medical facility on 12.5 gross acres. The project is located on the southeast corner of Knabe Road and Retreat Parkway, in the Temescal Canyon Area. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/OCambulatory-med013017.pdf Comment Period: 1/17/2017 - 2/9/2017 Public Hearing: N/A	Initial Study	County of Riverside	SCAQMD staff commented on 1/30/2017
Medical Facility **SBC170103-05** San Antonio Regional Hospital	The proposed project consists of the demolition of a 29,208-square foot medical office and a 6,000-square-foot birthing center building and the construction of a 59,700-square foot, two-story medical office building. The project is located at 1148 San Bernardino Road, on the southeast corner of North 11th Avenue and San Bernardino Road. Comment Period: 12/28/2016 - 1/18/2017 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Upland	Document reviewed - No comments sent
Retail **LAC170104-03** Tentative Parcel Map Case No. 74163, Development Plan Approval Case No. 915 and 916, Conditional Use Permit Case No. 777, Modification Permit Case No. 1268 and 1269	The proposed projects consists of the construction of a 44,593-square-foot concrete tilt-up industrial building located at 14114 Carmenita Road; a 2,998-square foot convenience store; and a 2,638-square-foot car wash and gasoline station at 13417 Rosecrans Avenue. Comment Period: N/A Public Hearing: 1/9/2017	Notice of Public Hearing	City of Santa Fe Springs	Document reviewed - No comments sent
Retail **LAC170112-14** ENV-2015-3452: 17000 W. Rinaldi Street	The proposed project consists of the demolition of a gas station and the construction, use, and maintenance of a one-story, 2,048-square-foot convenience store on a 15,756-square-foot site. The project is located on the southwest corner of Rinaldi Street and Balboa Boulevard. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/MND17000-w-rinaldi012017.pdf Comment Period: 1/12/2017 - 2/1/2017 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	SCAQMD staff commented on 1/20/2017

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SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Retail **LAC170112-15** ENV-2016-3418: 523 W. 6th Street	The proposed project consists of the construction of a 9,213-square-foot restaurant and two uncovered patio areas on the ground floor totaling 1,139 square feet. The project is located on W. 6th Street, between S. Grand Avenue and S. Olive Street. Comment Period: 1/12/2017 - 2/1/2017 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	Document reviewed - No comments sent
Retail **LAC170113-03** ENV-2016-4321-EIR: Venice Place Project	The proposed project consists of the demolition and construction of three restaurants totaling 9,202 square feet, 4,269 square feet of retail, 3,371 square feet of office space, 50,880 square feet of hotel space, and 2,588 square feet of apartments (four units). One of the three restaurant buildings will be demolished and replaced with a new restaurant, while the other two of the three buildings will be maintained. The project is located northeast of the corner of Abbot Kinney Boulevard and Broadway Street. The project is located at 1021-1033 and 1047-1051 South Abbott Kenney Boulevard and 1011 Electric Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPveniceplace012017.pdf Comment Period: 1/12/2017 - 2/13/2017 Public Hearing: N/A	Notice of Preparation	City of Los Angeles	SCAQMD staff commented on 1/19/2017
Retail **RVC170118-04** MA16207 (PAR16008)	The proposed project consists of a gas station and drive-thru convenience store on 5,000 square feet; and a drive-thru fast food restaurant on 2,500 square feet. The project is located at 5620 Market Street, on the southeast corner of Rubidoux Boulevard and Market Street. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCma16207-012017.pdf Comment Period: 1/4/2017 - 1/24/2017 Public Hearing: N/A	Initial Project Consultation	City of Jurupa Valley	SCAQMD staff commented on 1/20/2017
Retail **RVC170119-01** Dollar General, Pre-Application Review 01511	The proposed project consists of the construction of a 7,500-square-foot retail store on 1.09 acres. The project is located northwest of the corner of Haddock Street and Winchester Road. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCdollargeneral012617.pdf Comment Period: N/A Public Hearing: 1/26/2017	Initial Project Consultation	County of Riverside	SCAQMD staff commented on 1/26/2017

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Retail **RVC170119-02** Dollar General "Nuevo", Pre-Application Review 01510	The proposed project consists of the construction of a 9,100-square-foot retail store on 0.83 acres. The project is located northwest of the corner of Nuevo Road and Rosary Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCdollargeneralpar01510-012617.pdf Comment Period: N/A Public Hearing: 1/26/2017	Initial Project Consultation	County of Riverside	SCAQMD staff commented on 1/26/2017
Retail **RVC170120-01** Beaumont Plaza Project	The proposed project consists of the construction of a 4,000-square-foot restaurant, a 1,050-square-foot carwash, a convenience store, and a gas station with related infrastructure improvements on 2.3 acres. The project is located southwest of the Luis Estrada Road and Highway 79 intersection. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/mndbeaumont012717.pdf Comment Period: 1/17/2017 - 2/15/2017 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Beaumont	SCAQMD staff commented on 1/27/2017
General Land Use (residential, etc.) **LAC170105-04** ENV-2016-2752: 8811-8845 N. Sepulveda Boulevard, 15430 W. Rayen Street and 8832-8840 N. Langdon Avenue	The proposed project consists of the demolition of a commercial plant nursery and the construction of a multi-story residential apartment complex with a total of 364 dwelling units. The project is located on the southwest corner of Rayen Street and Sepulveda Boulevard. Comment Period: 1/5/2017 - 1/25/2017 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	Document reviewed - No comments sent
General Land Use (residential, etc.) **LAC170112-09** Los Robles Apartments Project	The proposed project consists of the demolition of the existing buildings and improvements from the site and construction of a four-story residential apartment complex containing 291 dwelling units and 34,970 square feet of courtyards. The project is located on N. Los Robles Avenue and N. Oakland Avenue, in between Corson Street and East Walnut Street. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPlosroblesapt012017.pdf Comment Period: 1/9/2017 - 2/8/2017 Public Hearing: 1/24/2017	Notice of Preparation	City of Pasadena	SCAQMD staff commented on 1/19/2017

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General Land Use (residential, etc.) **LAC170113-04** Edinburgh Avenue SLS	The proposed project consists of the demolition of existing improvements and construction of eight single-family homes. The project is located at 750-756 North Edinburgh Avenue, on the southeast corner of North Edinburgh and Waring Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPedinburghave012017.pdf Comment Period: 1/11/2017 - 2/10/2017 Public Hearing: N/A	Notice of Preparation	City of Los Angeles	SCAQMD staff commented on 1/19/2017
General Land Use (residential, etc.) **LAC170125-01** ENV-201-8-EIR: 222 West 2nd Project	The proposed project consists of the development of a 30-story mixed-use building consisting of 107 residential units (137,347 square feet), 7,200 square feet of ground-level commercial uses, and 534,044 square feet of office uses on 2.71 acres. The project is located south of the South Broadway and West 2nd Street intersection. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/mndbeaumont012717.pdf Comment Period: 1/25/2017 - 2/24/2017 Public Hearing: 2/9/2017	Notice of Preparation	City of Los Angeles	SCAQMD staff commented on 1/27/2017
General Land Use (residential, etc.) **LAC170126-01** The Lakes Specific Plan and Topgolf Project	The proposed project consists of the demolition of a two-level, 57-bay driving range and the construction of a three-story TopGolf facility located on approximately 12 acres, and the development of approximately 71,579 square feet on 26.55 acres. The project is located on the east side of South Sepulveda Boulevard between South Hughes Way and East El Segundo Boulevard. Reference LAC160913-04 Comment Period: 1/26/2017 - 3/13/2017 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	City of El Segundo	Under review, may submit written comments
General Land Use (residential, etc.) **LAC170127-04** ENV-2015-1342: 5181 W. Adams Boulevard	The proposed project consists of the demolition of two commercial buildings and the construction of a 97,920-square-foot, 55-foot tall mixed-use building with 72 units and approximately 27,000 square feet of commercial space, with 167 vehicle parking spaces in one subterranean lot and one above-grade podium structure. The project is located in the northeast corner of Alsace Avenue and West Adams Boulevard. Comment Period: 1/27/2017 - 2/15/2017 Public Hearing: N/A	Notice of Availability of a Mitigated Negative Declaration	City of Los Angeles	Under review, may submit written comments

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General Land Use (residential, etc.) **LAC170130-01** ENV-2016-3144: 1930 W. Wilshire Boulevard	The proposed project consists of converting a 104,000-square-foot medical office building into a 220-room hotel and the construction of a 41-story, 514,887-square-foot mixed-use residential building. The project is located in the south corner of South Westlake Avenue and Wilshire Boulevard. Reference LAC161229-05 Comment Period: N/A Public Hearing: N/A	Response to Comments	City of Los Angeles	Under review, may submit written comments
General Land Use (residential, etc.) **ORC170126-02** Lyon Estate Subdivision Project (EIR No. 624)	The proposed project consists of the subdivision of 64 acres of the 138-acre estate property located at Coto de Casa Drive near Via Colinas in the community of Coto de Caza. The proposed project would construct 25 single-family homes and subdivide the 64-acre property into 25 lots for residential development, two lots for the proposed private streets, and one lot for the proposed storm water treatment basin. Reference ORC151120-01 Comment Period: 1/26/2017 - 3/13/2017 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	County of Orange	Document reviewed - No comments sent
General Land Use (residential, etc.) **RVC170106-05** Rockport Ranch (TR 2016-285, SP 2016-286, GP 2016-287, CZ 2016-288)	The proposed project consists of the demolition and construction of 305 single-family residential lots, 20.1 acres of open space, 20.3 acres of roads, and easements on 78.8 acres. The project site was previously used for agricultural purposes. The project is located on the southwest corner of Briggs Road and Old Newport Road/Rockport Road. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCrockport-ranch012417.pdf Comment Period: 1/5/2017 - 2/1/2017 Public Hearing: N/A	Initial Project Consultation	City of Menifee	SCAQMD staff commented on 1/24/2017
General Land Use (residential, etc.) **RVC170112-07** La Quinta Peninsular Bighorn Sheep Barrier	The proposed project consists of the construction of a 9.5-mile linear barrier along the mountain-urban interface extending along the toe of slope to the Santa Rosa Mountains from the Quarry Golf Club residential development on the south, north along Lake Cahuilla and the PGA West development, north along the Silver Rock development, and west and south along the Tradition Golf Club development. Reference RVC160225-14 Comment Period: 1/13/2017 - 2/27/2017 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	Coachella Valley Conservation Commission	Under review, may submit written comments

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SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
General Land Use (residential, etc.) **RVC170113-01** Mixed Use Menifee Town Center Apartments, PP 2017-005	The proposed project consists of the construction of a 330-unit apartment complex on 12.71 acres. The project is located north of La Piedra Road, south of Newport Road, and west of the Paloma Wash. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCmenifeetown012017.pdf Comment Period: 1/10/2017 - 1/31/2017 Public Hearing: N/A	Initial Project Consultation	City of Menifee	SCAQMD staff commented on 1/19/2017
General Land Use (residential, etc.) **RVC170113-02** Planning Application RTR 2017-107 (TR 33522)	The proposed project consists of a revised tentative tract map which would increase the number of residential lots from 71 to 98 units and convert the dry channel into an underground storm drain system. The project is located south of Wickerd Road, east of Ascot Way, north of Heim Street, and west of Howard Road. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCrtr2017-107012017.pdf Comment Period: 1/10/2017 - 2/1/2017 Public Hearing: N/A	Initial Project Consultation	City of Menifee	SCAQMD staff commented on 1/19/2017
General Land Use (residential, etc.) **RVC170117-06** PEN16-0077, PEN16-0078, PEN16-0079, PEN16-0080, AND PEN16-0081	The proposed project consists of the development of a 181-lot single-family residential development, with trails, a park, open space areas and water quality features on 68.5 net acres. The project is located at Ironwood Avenue, east of Nason Street, and west of Oliver Street. Comment Period: N/A Public Hearing: 1/26/2017	Notice of Public Hearing	City of Moreno Valley	Document reviewed - No comments sent
General Land Use (residential, etc.) **RVC170118-01** MA16224 (GP16006: CZ16011; TPM37126: CPM1602: SDP16043)	The proposed project consists of the development of a 31,375-square-foot commercial building on 1.79 acres, and a 68-unit, 225,852-square-foot multi-family housing development on 5.162 acres. The project is located on the northeast corner of Mission Boulevard and Crestmore Road. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PCma16224-012017.pdf Comment Period: 1/4/2017 - 2/4/2017 Public Hearing: N/A	Initial Project Consultation	City of Jurupa Valley	SCAQMD staff commented on 1/20/2017

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SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
General Land Use (residential, etc.) **SBC170106-04** Redlands Supportive Housing Project	The proposed project consists of the construction and operation of an 80-unit apartment complex on 4.7 acres. The project is located on the southwest corner of West Lugonia Avenue and Texas Street. Comment Period: 1/4/2017 - 1/24/2017 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Redlands	Document reviewed - No comments sent
Plans and Regulations **RVC170112-01** Vision Agua Caliente Master Plan Project	The proposed project consists of expansion of the Spa Resort Casino by up to 68,000 square feet and the development of up to 350 new hotel rooms in the 510,000-square-foot hotel space. The project is bounded by Amado Road, Calle El Segundo, Tahquitz Canyon Way, and Indian Canyon Drive. Reference RVC151217-01 Comment Period: 1/12/2017 - 3/13/2017 Public Hearing: 2/7/2017	Notice of Availability of a Draft Environmental Impact Report	Agua Caliente Band of Cahuilla Indians	Document reviewed - No comments sent
Plans and Regulations **RVC170117-05** Truax Hotel in Old Town Temecula	The proposed project consists of a specific plan amendment to relocate a portion of the existing Hotel Overlay within the Old Town Specific Plan. The proposed project consists of the development of a five-story, approximately 155,630-square-foot hotel and is located along the south side of 3rd Street between Old Town Front Street and Mercedes Street. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPtruaxhotel020817.pdf Comment Period: 1/17/2017 - 2/15/2017 Public Hearing: 1/23/2017	Notice of Availability Supplemental Environmental Impact Report	City of Temecula	SCAQMD staff commented on 2/8/2017
Plans and Regulations **RVC170124-03** 190-Net Acre Windrow Composting Facility (Pre-Application No. 0514)	The proposed project consists of the construction of a 190-net-acre windrow composting facility which will recycle urban green material and agricultural manure into compost to be marketed to the landscaping and agricultural communities. The project site is comprised of an existing 3,000-square-foot building on 196.26 gross acres. The project is located at 18712 Bridge Street, east of the Bridge Street and San Jacinto River intersection, in the San Jacinto Valley Area. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/OC190acrewindrowcompost012917.pdf Comment Period: 1/17/2017 - 2/9/2017 Public Hearing: N/A	Initial Project Consultation	County of Riverside	SCAQMD staff commented on 1/29/2017

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SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Plans and Regulations **SBC170124-02** North Montclair Downtown Specific Plan Amendment Project ("NMDSP")	The proposed project consists of a proposed amendment which would involve amending the 20 North Montclair Downtown Specific Plan ("NMDSP") to allow for the future development of projects that are tied to the Montclair Transcenter, and the anticipated extension of the Foothill Gold Line that will extend light rail line to the City. The amendment would amend the NMDSP to allow for a maximum of 5,888 dwelling units and a total of 1,681,285 square feet of non-residential uses, which could include a mix of retail, commercial, and industrial uses. The project planning area is bounded by Huntington Drive on the north, Monte Vista Avenue on the west, Moreno street on the south, and Central Avenue on the east. Reference SBC161004-08 Comment Period: 1/23/2017 - 3/8/3017 Public Hearing: 2/15/2017	Notice of Availability of a Draft Supplemental Environmental Impact Report	City of Montclair	Document reviewed - No comments sent

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ATTACHMENT B*
ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS OR IS CONTINUING TO CONDUCT A CEQA REVIEW

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Goods Movement **LAC161216-06** Pier B On-Dock Rail Support Facility Project (12th Street Alternative)	The proposed project consists of the reconfiguration and expansion of the Pier B On-Dock Rail Support Facility which actions are to: (a) provide a sufficient facility to accommodate the expected demand of cargo to be moved via on-dock rail into the foreseeable future; (b) maximize on-dock intermodal operations to reach the long-term goal of 30 to 35 percent of cargo containers to be handled by on-dock rail; (c) provide a facility that can accept and handle longer container trains; and (d) provide a rail yard that is cost effective and fiscally prudent. The project site is located in two Planning Districts (the Northeast Harbor and North Harbor), and includes the Wilmington-Harbor City Community Plan Area of the City of Los Angeles. Comment Period: 12/15/2016 - 3/13/2017 Public Hearing: 1/18/2017	Draft Environmental Impact Report	Port of Long Beach	Under review, may submit written comments
Waste and Water-related **LAC161213-07** Preliminary Investigation Area Cleanup, Former Exide Facility	The proposed project consists of a cleanup plan which will address properties contaminated with lead in the communities that surround the Exide Technologies Facility in Vernon. Reference LAC160616-03 Comment Period: 12/14/2016 - 2/15/2017 Public Hearing: 1/11/2017	Draft Environmental Impact Report	Department of Toxic Substances Control	Under review, may submit written comments
General Land Use (residential, etc.) **LAC161118-01** Landmark Village Project	The project consists of the construction of 270 single-family and 1,174 multi-family homes, including 69 mixed-use/multi-family homes, 1,033,000 square feet of commercial retail/office use, a 9.7-acre elementary school, 1.3-acre fire station, a park and ride facility, and 76.7 acres of open space. The project site is located within the north-central area of Newhall Ranch. Portions of the Draft EIR are being recirculated for review. Reference LAC110915-03 Comment Period: 11/17/2016 - 2/13/2017 Public Hearing: 1/12/2017	Recirculated Draft Environmental Impact Report	County of Los Angeles	Under review, may submit written comments
General Land Use (residential, etc.) **LAC161118-03** Mission Village Project	The proposed project consists of the development of the 1,261.8-acre Mission Village. The project would include 4,055 homes and 1,555,100 square feet of commercial (retail/office) use, a 9.5-acre elementary school, 3.3-acre library, 1.5-acre fire station, 1.2-acre bus transfer station, and approximately 693 acres of open space. The project is located within the northeastern corner of Newhall Ranch. Portions of the Draft EIR are being recirculated for review. Comment Period: 11/17/2016 - 2/13/2017 Public Hearing: N/A	Notice of Availability of a Recirculated Draft Environmental Impact Report	County of Los Angeles	Under review, may submit written comments

Sorted by Comment Status, followed by Land Use, then County, then date received.

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Plans and Regulations **LAC161201-01** Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan	The California Department of Fish and Wildlife certified the Final EIR for the project in December 2010 and prepared the Draft Additional Environmental Analysis in response to two issues addressed by the California Supreme Court. As to the GHG issue, the project applicant has committed to achieve zero net GHG emissions for the project. With respect to unarmored threespine stickleback, the project applicant has proposed modified design and construction methods for bridges and bank stabilization in or near the Santa Clara River. Reference LAC100810-01 and LAC100618-02 Comment Period: 11/3/2016 - 2/13/2017 Public Hearing: N/A	Notice of Availability of Draft Additional Environmental Analysis	California Department of Fish and Wildlife	Under review, may submit written comments
Warehouse & Distribution Centers **RVC161129-06** San Gorgonio Crossings, 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. The project is located north of Cherry Valley Boulevard, east of Interstate 10 and west of Vineland Street. Reference RVC150113-01 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/DEIRsangorgcross011817.pdf Comment Period: 11/28/2016 - 1/18/2017 Public Hearing: N/A	Draft Environmental Impact Report	County of Riverside	SCAQMD staff commented on 1/18/2017
Warehouse & Distribution Centers **SBC161115-08** Colony Commerce Center Specific Plan	The proposed project consists of the development of a master planned industrial development totaling 2.95 million square feet of warehouse uses on approximately 123.17 acres of land. The project is located north of Remington Avenue, south of Merrill Avenue, east of Carpenter Avenue and west of the Cucamonga Creek Flood Control Channel. Reference SBC150616-04 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/DEIRcolony010317.pdf Comment Period: 11/15/2016 - 1/3/2017 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	City of Ontario	SCAQMD staff commented on 1/3/2017
Warehouse & Distribution Centers **SBC161227-04** Western Realco Bloomington Industrial Facility	The proposed project consists of the construction of a 676,983-square-foot distribution warehouse building on an approximately 34.54-acre property, with associated facilities and improvements such as a guard booth, parking, bicycle racks, landscaping and detention basins. The project is located on the corner of Cedar Avenue and Jurupa Avenue. Reference SBC160325-02 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/DEIRbloomington020317.pdf Comment Period: 12/23/2016 - 2/6/2017 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	County of San Bernardino	SCAQMD staff commented on 2/3/2017

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Industrial and Commercial **RVC161227-05** Kiewit Construction Yard Plot Plan No. 2016-292	The proposed project consists of the development of a contractor's storage yard on 9.7 acres. The project is located on Dawson Road and Ethanac Road. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/PC-2016-292-010517.pdf Comment Period: 12/22/2016 - 1/16/2017 Public Hearing: N/A	Initial Project Consultation	City of Menifee	SCAQMD staff commented on 1/5/2017
Waste and Water-related **LAC161109-02** Chiquita Canyon Landfill	The proposed project consists of developing a new entrance and support facilities; better utilizing the landfill's potential disposal capacity through a lateral extension of the new waste footprint and increased maximum elevation; increased daily disposal limit; acceptance of all nonhazardous waste permitted at a Class III solid waste disposal landfill; continued operation of the landfill; new design features; environmental monitoring; development of a Household Hazardous Waste Facility; mixed organics composting operation; and set-aside of land for potential future conversion technology. In addition, the project includes renovating a portion of Southern California Edison's existing Saugus-Elizabeth Lake-Fillmore 66 kilovolt Subtransmission Line in order to accommodate landfill improvements. The project is located in unincorporated Los Angeles County, near Santa Clarita. Reference LAC160108-01and LAC140709-01 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/DEIRchiquita011017.pdf Comment Period: 11/9/2016 - 1/9/2017 Public Hearing: N/A	Recirculated Draft Environmental Impact Report	County of Los Angeles	SCAQMD staff commented on 1/9/2017
Waste and Water-related **ORC161223-03** San Juan Watershed Project	The proposed project consists of the implementation of an integrated water resource management plan intended to maximize beneficial uses of the San Juan Groundwater Basin. The project includes the construction of rubber dams, recycled water recharge and recovery facilities, and conversion of private groundwater pumpers to alternative sources of water. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPsan-juan-watershed012017.pdf Comment Period: 12/1/2016 - 2/2/2017 Public Hearing: 1/12/2017	Notice of Preparation	Santa Margarita Water District	SCAQMD staff commented on 1/20/2017
Utilities **LAC161220-09** Grayson Repowering Project	The proposed project consists of repowering the Grayson Power Plant, which consists of all the existing generation equipment, related facilities, and infrastructure (with the exception of Unit 9). The proposed project is located at 800 Air Way, Glendale. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPgrayson011017.pdf Comment Period: 12/15/2016 - 1/20/2017 Public Hearing: 1/12/2016	Notice of Preparation	City of Glendale	SCAQMD staff commented on 1/10/2017

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SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Retail **LAC161227-02** Fig+Pico Conference Center Hotels	The proposed project consists of development of 506,682 square feet of floor area in two hotel towers and 13,145 square feet of retail and restaurant space on an approximately 1.22-acre site. The project site is located at 1240-1260 S. Figueroa Street and 601 W. Pico Boulevard. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/NOPfig-pico011517.pdf Comment Period: 12/22/2916 - 1/23/2017 Public Hearing: 1/10/2017	Notice of Preparation for an Environmental Impact Report	City of Los Angeles	SCAQMD staff commented on 1/5/2017
General Land Use (residential, etc.) **LAC161208-02** ENV-2016-2580: 3700 Wilshire Boulevard	The proposed project consists of the development of approximately 593,505 square feet of mixed-use residential and commercial building. The project site is located on the south side of Wilshire Boulevard between Oxford Avenue and Serrano Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/MND2016-2580-011017.pdf Comment Period: 12/8/2016 - 1/9/2017 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	SCAQMD staff commented on 1/10/2017
General Land Use (residential, etc.) **LAC161223-07** Pacific Villa Residential Development	The proposed project consists of the demolition of a vacant senior care facility and construction of 79 condominiums. The project site is located at 616 and 700 North Stoneman Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/MNDpacific-villa011017.pdf Comment Period: 12/21/2016 - 1/19/2017 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Alhambra	SCAQMD staff commented on 1/10/2017
General Land Use (residential, etc.) **LAC161229-05** ENV-2016-3144: 1930 W. Wilshire Boulevard	The proposed project consists of converting a 104,000-square-foot medical office building into a 220-room hotel and the construction of a 41-story, 514,887-square-foot mixed-use residential building. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/MND1930wwilshire011017.pdf Comment Period: 12/29/2016 - 1/18/2017 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	SCAQMD staff commented on 1/10/2017
General Land Use (residential, etc.) **RVC161216-01** Emerald Ridge Residential Project (MA 15072 and MA 15148)	The proposed project consists of two development applications. MA15072 consists of 118 townhomes and 97 single-family lots on approximately 24.9 acres. MA15148 consists of 184 single-family lots on approximately 43.5 acres. In total, the project would involve 399 dwelling units on approximately 68.4 acres along the north and south sides of Canal Street. Reference RVC160406-07 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/DEIRemeraldridge012017.pdf Comment Period: 12/15/2016 - 1/30/2017 Public Hearing: N/A	Draft Environmental Impact Report	City of Jurupa Valley	SCAQMD staff commented on 1/20/2017

- 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

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
General Land Use (residential, etc.) **SBC161223-05** Tentative Tract Map SUBTT19918, Design Review DRC2014-00732, Minor Exception DRC2016-00657, and DRC2016-00658	The proposed project consists of the development of an eight-unit, multi-family development on a 1.01-acre site. The project is located at 6th Street and Hellman Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/mnd6thhellman020717.pdf Comment Period: 1/2/2017 - 2/8/2017 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Rancho Cucamonga	SCAQMD staff commented on 2/7/2017
Plans and Regulations **LAC161122-05** Green Line Mixed Use Specific Plan Project	The proposed project consists of the development of the 2.53-acre Specific Plan area with a transit-oriented mixed-use neighborhood that accommodates up to 305 multi-family residential units and 11,020 square feet of supporting small restaurant, retail, and other commercial uses within the plan area. The project is located along Crenshaw Boulevard, between West 120th Street and West El Segundo Boulevard. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2017/deirgreenline010417.pdf Comment Period: 11/22/2016 - 1/5/2017 Public Hearing: N/A	Draft Environmental Impact Report	City of Hawthorne	SCAQMD staff commented on 1/4/2017

- 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, 2017

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
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.	Tesoro Refining and Marketing Company Los Angeles Refinery	Environmental Impact Report (EIR)	The comment period for the Draft EIR closed on June 10, 2016. Responses to comments are being prepared.	Environmental Audit, Inc.
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.	Phillips 66 (formerly ConocoPhillips), Los Angeles Refinery	Environmental Impact Report (EIR)	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.	Environmental Audit, Inc.
Quemetco is proposing an increase in the daily furnace feed rate.	Quemetco	Environmental Impact Report (EIR)	A Notice of Preparation/Initial Study (NOP/IS) has been prepared by the consultant and is under review by SCAQMD staff.	Trinity Consultants

A shaded row indicates a new project.

ATTACHMENT C
ACTIVE SCAQMD LEAD AGENCY PROJECTS
THROUGH JANUARY 31, 2017

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
Southern California Edison (SCE) is proposing to modify the air pollution control system for the Grapeland Peaker unit (formerly referred to as the Etiwanda Peaker unit) to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine's combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the selective catalytic reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19 percent (%) to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW), while continuing to meet the emission limits in the current permit.	Southern California Edison	Addendum to the March 2007 Final Mitigated Negative Declaration for the Southern California Edison Grapeland (formerly Etiwanda) Peaker Project in Rancho Cucamonga	The Addendum was approved by the Executive Officer on January 27, 2017.	Yorke Engineering, LLC
Southern California Edison (SCE) is proposing to modify the air pollution control system for the Center Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine's combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the Selective Catalytic Reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19 percent (%) to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW), while continuing to meet the emission limits in the current permit.	Southern California Edison	Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Center Peaker Project in Norwalk	A draft Addendum has been prepared by the consultant and is under review by SCAQMD staff.	Yorke Engineering, LLC

A shaded row indicates a new project.

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 20

REPORT: Rule and Control Measure Forecast

SYNOPSIS: This report highlights SCAQMD rulemaking activities and public workshops potentially scheduled for 2017.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

PMF:SN:AFM

The tables below summarize changes to the schedule since last month's Rule and Control Measure Forecast Report. Staff will continue to work with all stakeholders as these projects move forward.

1147	**NOx Reductions from Miscellaneous Sources**
Proposed Rule 1147 is being moved from May 2017 to June 2017 to allow additional time for staff to work with stakeholders.	
1148.3	**Requirements for Underground Gas Storage**
Proposed Rule 1148.3 is being moved from May 2017 to September 2017 to allow additional time for staff to work with stakeholders.	
1153.1	**Emissions of Oxides of Nitrogen from Commercial Food Ovens**
Proposed Rule 1153.1 is being moved from May 2017 to December 2017 to allow additional time for staff to work with stakeholders.	
1420	**Emission Standard for Lead**
Proposed Rule 1420 is being moved from April 2017 to November 2017 to allow additional time for staff to work with stakeholders.	
1466	**Toxic Air Contaminant Emissions from Decontamination of Soil**
Proposed Rule 1466 is being moved from April 2017 to July 2017 to allow additional time for staff to work with stakeholders.	

2017 MASTER CALENDAR

[*]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.

2017

March	Title and Description	Type of Rulemaking
1430[*]	**Control of Emissions from Grinding Operations at Metal Forging Facilities** Proposed Rule 1430 will establish emission reduction requirements for metal grinding operations at forging facilities and possibly other requirements to address metal particulate emissions. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
May	**Title and Description**	**Type of Rulemaking**
219 222	**Equipment Not Requiring a Written Permit Pursuant to Regulation II** **Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II** Proposed Amended Rule 219 will exclude equipment with de minimis emissions from the requirement to obtain written permits. Proposed Amended Rule 222 will be proposed in tandem to add additional equipment categories to the streamlined filing registration program. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other Other
Reg III	**Fees** Regulation III will incorporate the CPI adjustment to keep pace with inflation, pursuant to Rule 320, and proposed amendments may also make any other needed adjustments. *Carol Gomez 909.396.3264 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1150.1	**Control of Gaseous Emissions from Municipal Solid Waste Landfills** Proposed amendments will address U.S. EPA revisions to the Standards of Performance for Municipal Solid Waste Landfills (NSPS) and Existing Guidelines and Compliance Timelines (EG) for Municipal Solid Waste Landfills, as well as CARB GHG requirements. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Other

2017 MASTER CALENDAR (Continued)

2017 *(Continued)*

June	Title and Description	Type of Rulemaking
1118[+]	**Control of Emissions from Refinery Flares** The proposed amendments would address emissions from flaring during external events like power failures on the local grid and from flaring events caused by refinery activities. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1147[*]	**NOx Reductions from Miscellaneous Sources** Proposed Amended Rule 1147 will modify emission limits for certain source categories based on findings and recommendations from the Rule 1147 Technology Assessment. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1445	**Control of Toxic Emissions from Laser Arc Cutting** Proposed Rule 1445 will establish requirements to reduce toxic metal particulate emissions from laser arc cutting. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
July	**Title and Description**	**Type of Rulemaking**
1426[*]	**Emissions from Metal Finishing Operations** Proposed amendments to Rule 1426 will establish requirements to reduce nickel, cadmium and other air toxics from plating operations.	Toxics
1469[*]	**Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations** Proposed Amended Rule 1469 will strengthen requirements to address potential fugitive emissions from hexavalent chrome plating and anodizing operations. *Susan Nakamura 909.396.3104 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
1466	**Toxic Air Contaminant Emissions from Decontamination of Soil** Proposed Rule 1466 will establish requirements to control toxic particulate emissions from activities involving storing, handling and transporting soils during soil decontamination activities. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
2202	**On-Road Motor Vehicle Mitigation Options** Rule 2202 will be amended to enhance emission reductions obtained from the Employee Commute Reduction Program (ECRP) rule option. *Carol Gomez 909.396.3264 CEQA and Socio: Jillian Wong 909.396.3176*	Other

2017 *(Continued)*

September	Title and Description	Type of Rulemaking
1148.3	**Requirements for Underground Gas Storage** Proposed Rule 1148.3 will establish requirements to address public nuisance and VOC emissions from underground natural gas storage facilities. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1168	**Adhesive and Sealant Applications (CTS-02)** Amendments to Rule 1168 will partially implement CTS-02 and reflect improvements in adhesive and sealant technology, as well as remove outdated provisions and include minor clarifications. *Philip Fine 909.396.2239 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP
1401	**New Source Review of Toxic Air Contaminants** Amendments will update requirements for gas stations and paint booths, and will consider additional administrative changes. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
October	**Title and Description**	**Type of Rulemaking**
415*	**Odors from Animal Rendering Facilities** Proposed Rule 415 will establish requirements to reduce odors created during animal rendering operations. The proposed rule will establish Best Management Practices, and will consider enclosure, odor control requirements for the receipt and processing of rendering material and wastewater, and possibly requirements for an Odor Mitigation Plan. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other
Reg. IX Reg. X	**Standards of Performance for New Stationary Sources** **National Emission Standards for Hazardous Air Pollutants** Amendments to Regulations IX and X are periodically made to incorporate by reference new or amended federal performance standards that have been enacted by U.S. EPA for stationary sources. Regulations IX and X provide stationary sources with a single point of reference for determining which federal and local requirements apply to their specific operations. *Carol Gomez 909.396.3264 CEQA and Socio: Jillian Wong 909.396.3176*	Other

2017 MASTER CALENDAR (Continued)

2017 *(Continued)*

October (continued)	Title and Description	Type of Rulemaking
1407* 1407.1	**Control of Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Operations** Proposed Rule 1407 will establish additional requirements to minimize air toxics from metal operations. Staff is analyzing sources subject to Rule 1407 and may develop a separate Rule 1407.1 for the largest sources subject to Rule 1407. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
November	**Title and Description**	**Type of Rulemaking**
1118.1	**Control of Emissions from Non-Refinery Flares** Proposed Rule 1118.1 will seek to reduce emissions from flaring at non-refinery facilities, including alternate uses of gases. The rule would require the installation of newer flares implementing the Best Available Control Technology at sources such as landfills, wastewater treatment plants, and oil and gas production facilities. Alternate uses of flare gas would be encouraged, especially for facilities that, for example, would clean it for use as a transportation fuel, process it to become pipeline-quality dry natural gas, or direct it to equipment that can convert its energy into power and/or heat. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1180	**Refinery Fenceline and Community Monitoring** Proposed Rule 1180 will establish the requirements for fenceline and community monitoring at petroleum refineries. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1420	**Emission Standard for Lead** In October 2008, U.S. EPA lowered the National Ambient Air Quality Standard (NAAQS) for lead from 1.5 to 0.15 $\mu g/m^3$. Proposed Rule 1420 will establish requirements for lead-emitting sources that are not covered under Rules 1420.1 and Rule 1420.2 to ensure compliance with the lead NAAQS. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
1435	**Control of Emissions from Metal Heat Treating Processes** Proposed Rule 1435 would establish requirements to reduce metal particulate emissions from heat treating processes. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics

2017 MASTER CALENDAR (Continued)

2017 *(Continued)*

December	Title and Description	Type of Rulemaking
1153.1	**Emissions of Oxides of Nitrogen from Commercial Food Ovens** Rule 1153.1 was adopted in November 2014 and established NOx emission limits for various types of existing commercial food ovens on a specified compliance schedule. Amendments may be necessary to address applicability and technological feasibility of low-NOx burner technologies for new commercial food ovens. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1410*	**Hydrogen Fluoride Use at Refineries** Proposed Rule 1410 will establish requirements for use of hydrogen fluoride at refineries. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics

2017 To-Be-Determined

To-Be-Determined	Title and Description	Type of Rulemaking
102	**Definition of Terms** Staff may amend Rule 102 to add or revise definitions to support amendments to other Regulation XI rules. *Susan Nakamura 909.396.3105 CEQA and Socio: Jillian Wong 909.396.3176*	Other
223	**Emission Reduction Permits for Large Confined Animal Facilities** Proposed Amended Rule 223 will seek additional emission reductions from large confined animal facilities by lowering the applicability threshold. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP
224	**Incentives for Super-Compliant Technologies** Proposed Amended Rule 224 will outline strategies and requirements to incentivize the development, establishment and use of super-compliant technologies. It may be considered as a part of Rule 219 amendments or proposed as a separate incentive. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other

2017 MASTER CALENDAR (Continued)

2017 To-Be-Determined *(Continued)*

To-Be-Determined	Title and Description	Type of Rulemaking
416	**Odors from Kitchen Grease Processing** Proposed Rule 416 will reduce odors created during kitchen grease processing operations. The proposed rule will establish best management practices, and examine enclosure requirements for wastewater treatment operations and filter cake storage. The proposed rule may also contain requirements for an Odor Mitigation Plan. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other
430	**Breakdown Provisions** This rule will be amended or replaced to address specific issues raised by U.S. EPA regarding start-ups or shutdowns associated with breakdowns. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP
1106 1106.1	**Marine Coating Operations** **Pleasure Craft Coating Operations** (This item was previously submitted to the Board, but rejected. It will be brought back for Board direction.) The proposed amendment is two-fold: first, Rule 1106.1 is proposed to be rescinded and second, Rule 1106 would subsume the requirements of 1106.1, and revise VOC content limits for pretreatment wash primers, antenna, repair and maintenance thermoplastic, inorganic zinc, and specialty marking coatings in order to align limits with U.S. EPA Control Techniques Guidelines and other California air districts, and add new categories for marine aluminum antifoulant, mist, nonskid and organic zinc coatings and marine deck primer sealant. The proposed amendment would also add provisions for pollution prevention measures, enhanced enforceability, and to promote clarity and consistency. *Philip Fine 909.396.2239 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1107+	**Coating of Metal Parts and Products (CTS-02)** Potential amendments to Rule 1107 would further reduce VOC emissions and improve rule clarity and enforceability. *Philip Fine 909.396.2239 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP

2017 MASTER CALENDAR (Continued)

2017 To- Be- Determined *(Continued)*

To-Be-Determined	Title and Description	Type of Rulemaking
1113	**Architectural Coatings** Depending on the final recommendations of the tBAc white paper and the actions of the Scientific Review Panel for the Office of Environmental Health Hazard Assessment (OEHHA), reassessment of the limited tBAc exemption in the Rule will occur. *Philip Fine 909.396.2239 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1111 1111.1	**Reduction of NOx Emissions from Natural Gas Fired, Fan-Type Central Furnaces** Rule 1111 may be amended to address compliance challenges. **Reduction of NOx Emissions from Natural Gas Fired Commercial Furnaces (CMB-01)** Proposed Rule 1111.1 will establish equipment-specific nitrogen oxides emission limits and other requirements for the operation of commercial space heaters. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP
1123+	**Refinery Process Turnarounds (MCS-03)** Proposed amendments 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. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP
1135	**Emissions of Oxides of Nitrogen from Electric Power Generating Systems** At the December 4, 2015 Board meeting, Rule 2001- Applicability was amended, allowing for an off-ramp from the NOx RECLAIM program for electricity generating facilities (EGF) operating at Best Available Control Technology (BACT) or Best Available Retrofit Control Technology (BARCT) NOx emission levels. Any EGF that opts out of the NOx RECLAIM program will need to comply with the proposed amendments to Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating Systems. The primary purpose of these proposed amendments is for the EGF facility to maintain compliance with the NOx RECLAIM emission limits. The EGF owner or operator would need to comply with the newly developed Rule 1135 source-specific requirements no later than three years after approval of their Rule 2001 opt-out plan. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other

2017 MASTER CALENDAR (Continued)

2017 To- Be- Determined *(Continued)*

To-Be-Determined	Title and Description	Type of Rulemaking
1136*,+	**Wood Products Coatings (CTS-02)** Amendments may be proposed to existing rule limits and other provisions.	AQMP
1450*	**Control of Methylene Chloride Emissions** The proposed rule is to reduce exposure to methylene chloride from furniture stripping, remove potential regulatory loopholes, achieve emission reductions where possible and cost effective, include reporting requirements, and clarify the rule language to improve consistency with other SCAQMD VOC rules. *Philip Fine 909.396.2239 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
1142	**Marine Tank Vessel Operations** Revisions to Rule 1142 are proposed to address VOC emissions from marine tank vessel operations and provide clarifications. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1146, 1146.1, 1146.2*,+	**Emissions of Oxides of Nitrogen** Amendments to Rules 1146, 1146.1, and 1146.2 may be necessary to respond to advancements in ultra-low NOx burner technology and selective catalytic reduction (SCR) applicability. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1148.1 1148.2	**Oil and Gas Production Wells** **Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers** Amendments to Rule 1148.2 may be needed to address community notification procedures, the inclusion of water injection wells, and potentially other measures based on an evaluation of information collected since the last rule adoption. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1151	**Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations** Depending on the final recommendations of the tBAc white paper and the actions of the Scientific Review Panel for the Office of Environmental Health Hazard Assessment (OEHHA), reassessment of the limited tBAc exemption in the Rule will occur. *Philip Fine 909.396.2239 CEQA and Socio: Jillian Wong 909.396.3176*	Other

2017 MASTER CALENDAR (Continued)

2017 To- Be- Determined *(Continued)*

To-Be-Determined	Title and Description	Type of Rulemaking
1173+	**Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants** Proposed revisions to Rule 1173 are being considered based on recent U.S. EPA Regulations and CARB's oil and gas regulations. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1177+	**Liquefied Petroleum Gas Transfer and Dispensing (2012 AQMP FUG-02)** Potential amendments may be proposed to include additional sources of emissions from the dispensing and transfer of LPG. *Philip Fine 909.396.2239 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP
1188+	**VOC Reductions from Vacuum Trucks (FUG-01)** 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. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP
1190, 1191, 1192, 1193, 1194, 1195, 1196, and 1186.1	**Fleet Vehicle Requirements** Amendments to Rule 1190 series fleet rules may be necessary to address implementation. In addition, the current fleet rules may be expanded to achieve additional air quality and air toxic benefits. *Dean Saito 909.396.2647 CEQA and Socio: Jillian Wong 909.396.3176*	Other

2017 MASTER CALENDAR (Continued)

2017 To- Be- Determined *(Continued)*

To-Be-Determined	Title and Description	Type of Rulemaking
1304.2	**California Public Utilities Commission Regulated Electrical Local Publicly Owned Electrical Utility Fee for Use of SOx, PM10 and NOx Offsets**	Other
1304.3	**Local Publicly Owned Electrical Generating Facility Fee for Use of SOx, PM10 and NOx Offsets** Proposed Rules 1304.2 and 1304.3 would allow new greenfield facilities and additions to existing electrical generating facilities conditioned access to SCAQMD internal offset accounts for a fee, for subsequent funding of qualifying improvement projects consistent with the AQMP. Proposed Rule 1304.2 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 to maintain grid reliability. Proposed Rule 1304.3 will provide offsets so that new, proposed and other existing electrical generating facilities run by local municipalities can meet the electricity reliability needs of their customers. *Tracy Goss 909.396.3106 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1470*	**Requirement for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines at Sensitive Receptors** The proposal would address new and existing small (≤ 50 brake horsepower) diesel engine emissions located near sensitive receptors such as schools, preschools, daycare centers and health care facilities. Staff is also considering amendments to minimize use of stationary diesel back-up engines that may include use alternative power sources that are substantially less polluting. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Toxics
Reg. XVI	**Mobile Source Offset Programs** Amendments to various Regulation XVI rules will be proposed to address the recent U.S. EPA proposed disapproval of such rules including Rule 1610. *Henry Hogo 909.396.3184 CEQA and Socio: Wong 909.396.3176*	Other

2017 MASTER CALENDAR (Continued)

2017 To- Be- Determined *(Continued)*

To-Be-Determined	Title and Description	Type of Rulemaking
Reg. XVII	**Prevention of Significant Deterioration** Proposed Regulation XVII will align the AQMD's Prevention of Significant Deterioration program with federal requirements. *Carol Gomez 909.396.3264 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1902	**Transportation Conformity** Amendments to Rule 1902 may be necessary to bring the District's Transportation Conformity rule in line with current U.S. EPA requirements. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Other
1905	**Pollution Controls for Automotive Tunnel Vents** This proposed rule would address emissions from proposed roadway tunnel projects that could have air quality impacts. *Ian MacMillan 909.396.3244 CEQA and Socio: Jillian Wong 909.396.3176*	Other
Reg. XXIII	**Emissions Growth Management of Various Emissions Sources** Regulation XXIII will contain rules related to emissions growth management of various emission sources including, but not limited to, new or redevelopment projects and other sources where criteria pollutant emissions associated with the region's growth may cause or exacerbate exceedance of an air quality standard. Proposed rule(s) will implement the 2007 AQMP Control Measure EGM-01 – Emission Reductions from New or Redevelopment Projects and potential implementation of EGM-01 proposed in the Draft 2016 AQMP if approved by the Board. Regulation XXIII may include other sources as provided in the Final 2016 AQMP to be submitted to U.S. EPA. *Henry Hogo 909.396.3184 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP
Reg. XXV	**On-Road and Off-Road Mobile Source Credit Generation Programs** Regulation XXV will contain rules to allow generation of criteria pollutant mobile source emission reduction credits (MSERCs) from various on-road and off-road sources, such as on-road heavy-duty trucks, off-road equipment, locomotives, and marine vessels. Credits will be generated by retrofitting existing engines or replacing the engines with new lower- emitting or zero-emission engines. The Draft 2016 AQMP proposed limiting use of MSERCs to facilities where the mobile source emissions occur. *Henry Hogo 909.396.3184 CEQA and Socio: Jillian Wong 909.396.3176*	AQMP

2017 MASTER CALENDAR (Continued)

2017 To- Be- Determined *(Continued)*

To-Be-Determined	Title and Description	Type of Rulemaking
Reg. XXVII	**Climate Change** Changes may be needed to Regulation XXVII to add or update protocols for GHG reductions, and other changes. *Philip Fine 909.396.2239 CEQA and Socio: Jillian Wong 909.396.3176*	Other
Reg. II, IV, XI, XIII, 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, new or amended rules to implement the 2012 or 2016 AQMP measures. This includes measures in the 2010 Clean Communities Plan (CCP) or 2016 AQMP to reduce toxic air contaminants or reduce exposure to air toxics from stationary, mobile, and area sources. Rule amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures or U.S. EPA's National Emission Standards for Hazardous Air Pollutants.	Other

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 21

REPORT: FY 2016-17 Contract Activity

SYNOPSIS: This report lists the number of contracts let during the first six months of FY 2016-17, the respective dollar amounts, award type, and the authorized contract signatory for the SCAQMD.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

MOK:DH:EA:lg

Background
The Board's Procurement Policy and Procedures requires staff to provide 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 benefits; 4) Amendments – modifications to existing contracts usually reflecting changes in the project scope and/or schedule; 5) Terminated Contracts – Partial/No 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 327 contracts and modifications (including terminations) issued during this period, New Awards accounted for 170, Other accounted for 25, Sponsorships accounted for 19, and Modifications accounted for 113. The total value for New Awards was $47,374,124.00. Of this amount, $39,901,504.00 or 84% was awarded through the

competitive process. The total value of all contracts and contract modifications for this period was $51,123,647.17 with 168 contracts and contract modifications totaling $49,217,442.00 (96%) approved by the Board, and 150 contracts and contract modifications totaling $1,903,182.68 (4%) approved by the Executive Officer. This does not include contract modifications for termination with partial work or no work completed, which are addressed below. Of this amount, $853,393.14 (45%) representing 22 contracts and contract modifications was for Board Member Assistant contracts as approved by the Board's Administrative Committee; $619,631.00 (33%) representing 11 contracts awarded on a sole source and competitive basis in the areas of technical consulting and litigation/legal services; $163,785.00 (9%) representing 19 contracts was for sponsorships and outreach events; $56,150.00 (3%) representing 9 contracts was for miscellaneous goods and services; and $198,135.00 (10%) representing 85 contracts was for contract modifications for extensions of time or additional budgeted services from previously approved vendors. Nine contract terminations with partial or no work completed during this period resulted in de-obligating a total of $2,038,556.92.

CONTRACT CATEGORY	NUMBER	AMOUNT
New Awards	170	$47,374,124.00
Other	25	$ 865,481.68
Sponsorships	19	$ 163,785.00
Modifications	104	$ 2,720,256.49
Terminations	9	-$ 2,038,566.92

Attachment
Contract Activity Report for the period July 1, 2016 through December 31, 2016.

South Coast Air Quality Management District
Contract Activity Report
July 1, 2016 - December 31, 2016

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
I. NEW AWARDS							
Competitive - Board Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16041	63	UPGRADE HYDROGEN FUELING INFRASTRUCTURE IN TORRANCE	EQUILON ENTERPRISES LLC	$2,476,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16175	32	REPLACEMENT OF 1 OFF-ROAD VEHICLE	SOUTHERN CALIFORNIA LANDSCAPE SUPPLY LLC	$216,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16180	32	REPLACEMENT OF 3 OFF-ROAD VEHICLES	SHINKLE & SONS GREENHOUSES INC	$101,927.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16197	32,80	REPOWER 3 OFF-ROAD VEHICLES	WILLIAMS HEAVY EQUIPMENT RENTALS INC	$167,133.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C16248	01	ELEVATOR SERVICE AND PREVENTATIVE MAINTENANCE FOR FY 2016-17	THYSSENKRUPP ELEVATOR CORP	$108,468.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16264	32,17	REPOWER 2 MAIN ENGINES ON 1 MARINE VESSEL	FRESH ONE, LLC	$137,309.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16278	32,17	REPOWER 1 MAIN ENGINE ON 1 MARINE VESSEL	ALIAKSANDR KIRYCHENKA	$113,900.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16280	81	PROP 1B TRUCK REPLACEMENT PROGRAM	F & E TRUCKING CORP.	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16281	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ECHO TRUCKING INC.	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16282	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BLANCA'S TRUCKING INC.	$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16283	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARSS TRUCKING	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16284	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS ROBERTO GOMEZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16285	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALEX MANUEL CHACON GARCIA	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16287	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AJJ TRANSPORT INC	$60,000.00	

South Coast Air Quality Management District
Contract Activity Report
July 1, 2016 - December 31, 2016

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16288	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE B. QUIROA	$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16289	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HENRY JAMES CHAVEZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16291	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LOWE MATERIALS TRANSPORT	$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16293	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN CARLOS HERNANDEZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16294	81	PROP 1B TRUCK REPLACEMENT PROGRAM	YOUNGMAN SA	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16295	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAMON MEDINA	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16296	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RICARDO A. SAGASTUME	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16297	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TUBULAR STEEL INC	$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16298	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUBEN RANGEL	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16299	81	PROP 1B TRUCK REPLACEMENT PROGRAM	THREE PEAKS CORP	$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16300	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NUEVA VISION TRUCKING INC.	$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16303	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE ALBERTO HERNANDEZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16304	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BLUE ROAD TRANSPORT, INC.	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16306	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOE E RUIZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16307	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE H. ISLAS	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16308	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FERNANDO RIVERA OLIVARES	$60,000.00	

South Coast Air Quality Management District
Contract Activity Report
July 1, 2016 - December 31, 2016

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16310	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARVIN J DELCID	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16311	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GERSON E SALAZAR	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16312	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN M. CORPUS	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16315	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALDO DELCID AGUILAR	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16317	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CJ TRUCK LINES INC.	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16318	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JIMMY D MARSHALL	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16319	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ORLANDO ANDRADE	$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16321	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARCO GONZALEZ	$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16323	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WILSON BADIOS	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16324	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ELIEZER TRUCKING	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16325	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS FLORES GARCIA	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16326	81	PROP 1B TRUCK REPLACEMENT PROGRAM	INTERNATIONAL EXPORT INC.	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16328	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRACEY POTTER	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16329	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRANCISCO J. TRUJILLO	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16340	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BRITHINEE ELECTRIC	$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16341	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MAXLINK LOGISTICS, INC.	$120,000.00	

South Coast Air Quality Management District
Contract Activity Report
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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16346	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALBERTO CORPUS	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16347	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DAVID VELASCO TRUCKING	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16349	27	REPOWER OF 2 MAIN ENGINES OF A MARINE VESSEL	JAMES J SIMMERMAN	$145,350.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16350	27	REPOWER OF 2 MAIN ENGINES OF A MARINE VESSEL	PHILIP HUYNH	$181,900.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16352	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALBERTO MORALES CRUZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16353	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RODOLFO HERNANDEZ SANCHEZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16354	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EFRAIN LARA	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16355	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAFAEL ZERMENO	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16356	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS MIDENCE	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16358	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANTELOPE LOGISTICS, INC.	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16360	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CONRAD NOVACK	$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16362	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE G. ORDAZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16368	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MANUEL PORFIRIO	$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16370	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUBEN LOERA JR.	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16371	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EBOW ABANYIE	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16372	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SAND MATERIALS & AGGREGATE SALES INC	$120,000.00	

South Coast Air Quality Management District
Contract Activity Report
July 1, 2016 - December 31, 2016

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16373	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOAQUIN MOREIRA	$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16374	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CYRUS BEHROSTAGHi	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16377	32,17	REPLACE 2 OFF-ROAD VEHICLES	SAGE GREEN, LLC	$537,920.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16379	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CLOVIS GONZALES	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16380	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS A MARTINEZ	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16381	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JJJA TRUCKING GP	$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16382	32	REPOWER 1 OFF-ROAD VEHICLE	RALPH D MITZEL INC	$169,644.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16385	32,17	REPLACEMENT OF 5 OFF-ROAD VEHICLES	RWP TRANSFER INC	$1,027,601.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16390	81	PROP 1B TRUCK REPLACEMENT PROGRAM-OPERATION ONLY	DARGUS LEASING CORP.	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16395	81	PROP 1B TRUCK REPLACEMENT PROGRAM-OPERATION ONLY	FRANCISCO JAVIER LEAN GONZALEZ	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16396	32	REPLACEMENT OF 1 OFF-ROAD VEHICLE AND REPOWER OF 1 OFF-ROAD VEHICLE	TINA MCMINN EQUIPMENT RENTALS, INC.	$1,141,353.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C16399	01	LANDSCAPE AND TREE MAINTENANCE SERVICES FY 16-17	SO CAL LAND MAINTENANCE INC	$182,821.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16401	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALL SEASONS HAY COMPANY	$60,000.00	
20	MEDIA OFFICE	C17023	36	MEDIA, ADVERTISING AND PUBLIC OUTREACH CAMPAIGN FOR CHECK BEFORE YOU BURN PROGRAM	WESTBOUND COMMUNICATIONS INC	$246,000.00	

South Coast Air Quality Management District
Contract Activity Report
July 1, 2016 - December 31, 2016

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17024	27	PROVIDE UP TO 3,000 ELECTRIC POWERED LAWN MOWERS FOR THE LAWN MOWER EXCHANGE EVENTS FOR THE RESIDENTS OF THE SOUTH COAST AIR BASIN	CHERVON NORTH AMERICA, INC	$145,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17025	27	SCRAP GASOLINE LAWN MOWERS AFTER DRAINING THE FUEL SAFELY AT THE LAWN MOWER EXCHANGE SITES AND PROVIDE TRANSPORTATION FROM THE SITES	DICK'S AUTO WRECKERS	$36,700.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17026	27	PROVIDE UP TO 3,000 ELECTRIC POWERED LAWN MOWERS FOR THE LAWN MOWER EXCHANGE EVENTS FOR RESIDENTS OF THE SOUTH COAST BASIN	BLACK & DECKER (US) INC	$145,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17027	27	PROVIDE UP TO 3,000 ELECTRIC POWERED LAWN MOWERS FOR THE LAWN MOWER EXCHANGE EVENTS FOR RESIDENTS OF THE SOUTH COAST AIR BASIN	THE GREENSTATION	$145,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17028	27	PROVIDE SUPPORT SERVICES AT THE LAWN MOWER EXCHANGE EVENTS	PARKING CONCEPTS INC	$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17037	31	PROVIDE TECHNICAL ASSISTANCE WITH ALTERNATIVE FUELS, ELECTRIC VEHICLES, CHARGING AND FUELING INFRASTRUCTURE AND RENEWABLE ENERGY	CLEAN FUEL CONNECTION INC	$50,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C17042	01	DEFERRED COMPENSATION PLAN CONSULTING SERVICES	BENEFIT FUNDING SERVICES GROUP	$90,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17044	80	PROVIDE TECHNICAL ASSISTANCE, IMPLEMENTATION AND OUTREACH SUPPORT FOR CARL MOYER PROGRAM	CLEAN FUEL CONNECTION INC	$175,000.00	
27	INFORMATION MANAGEMENT	C17048	01	ONBASE AGENDA TRACKING SYSTEM MIGRATION	HYLAND SOFTWARE, INC.	$84,700.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17049	58	TECHNICAL ASSISTANCE, IMPLEMENTATION AND OUTREACH SUPPORT FOR AB1318 PROGRAM	CLEAN FUEL CONNECTION INC	$50,000.00	

South Coast Air Quality Management District
Contract Activity Report
July 1, 2016 - December 31, 2016

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17050	81	PROVIDE TECHNICAL ASSISTANCE, IMPLEMENTATION AND OUTREACH SUPPORT FOR PROP 1B GOODS MOVEMENT PROGRAM	CLEAN FUEL CONNECTION INC	$235,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17063	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CALPORTLAND COMPANY	$12,730,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17065	01	EV INFRASTRUCTURE INSTALLER	CLEAN FUEL CONNECTION INC	$805,219.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17069	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WILSON R. LAZARO	$65,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17070	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MATHESON POSTAL SERVICES INC	$780,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C17077	01	EXECUTIVE SEARCH AND RECRUITMENT SERVICES	CPS HUMAN RESOURCE CONSULTING	$22,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17097	31	TECHNICAL ASSISTANCE WITH ALTERNATIVE FUELS AND FUELING INFRASTRUCTURE, EMISSIONS ANALYSIS AND ON-ROAD SOURCES	GLADSTEIN, NEANDROSS & ASSOCIATES	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17098	81	TECHNICAL ASSISTANCE, IMPLEMENTATION & OUTREACH SUPPORT FOR PROP 1B PROGRAM	GLADSTEIN, NEANDROSS & ASSOCIATES	$50,000.00	
04	FINANCE	C17104	22,23	AUDIT OF AB2766 FEE REVENUE RECIPIENTS FOR FISCAL YEARS 2013-14 & 2014-15	SIMPSON & SIMPSON, CPAs	$105,350.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17114	01	APPLICATION OF NEXT GENERATION AIR MONITORING METHODS TO CHARACTERIZE HAZARDOUS AIR POLLUTANT EMISSIONS FROM REFINERIES AND ASSESS POTENTIAL IMPACTS TO SURROUNDING COMMUNITIES	FLUXSENSE AB	$280,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16219	33	PURCHASE 1 ELECTRIC SCHOOL BUS	LOS ANGELES UNIFIED SCHOOL DISTRICT	$275,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16260	80	REPLACE 5 CNG TANKS ON SCHOOL BUSES	MONROVIA UNIFIED SCHOOL DISTRICT	$100,000.00	

South Coast Air Quality Management District
Contract Activity Report
July 1, 2016 - December 31, 2016

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16271	80	REPLACE 1 PARTICULATE MATTER TRAP ON 1 SCHOOL BUS	FULLERTON JOINT UNION HIGH SCHOOL DIST	$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16272	80	PURCHASE 2 PARTICULATE MATTER TRAPS ON 2 SCHOOL BUSES	HUNTINGTON BEACH UNIFIED SCHOOL DISTRICT	$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16273	80	PURCHASE 2 PARTICULATE MATTER TRAPS FOR 2 SCHOOL BUSES	LA HABRA CITY SCHOOL DISTRICT	$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16274	80	PURCHASE 1 PARTICULATE MATTER TRAP FOR 1 SCHOOL BUS	WALNUT VALLEY UNIFIED SCHOOL DISTRICT	$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16336	80	LOWER EMISSION SCHOOL BUS TANK REPLACEMENT PROGRAM	BANNING UNIFIED SCHOOL DISTRICT	$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16337	80	REPLACE 1 CNG TANK ON 1 SCHOOL BUS	ONTARIO-MONTCLAIR SCHOOL DISTRICT	$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16364	80	LOWER EMISSION SCHOOL BUS CNG TANK REPLACEMENT PROGRAM	JURUPA UNIFIED SCHOOL DISTRICT	$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16365	80	REPLACE 18 CNG TANKS ON SCHOOL BUSES	GARDEN GROVE UNIFIED SCHOOL DISTRICT	$360,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16400	80	LOWER EMISSION SCHOOL BUS TANK RETROFIT PROGRAM	EL MONTE UNION HIGH SCHOOL DISTRICT	$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G17052	80	LOWER EMISSION SCHOOL BUS TANK RETROFIT PROGRAM	LOS ANGELES UNIFIED SCHOOL DISTRICT	$200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G17078	80	REPLACE 7 CNG TANKS ON BUSES	LOS ANGELES UNIFIED SCHOOL DISTRICT	$140,000.00	
44	MSRC	ML14013	23	PURCHASE OF 14 HEAVY-DUTY NATURAL GAS VEHICLES	CITY OF LOS ANGELES	$400,000.00	
44	MSRC	ML14070	23	RANCHO CUCAMONGA BICYCLE PROJECTS	CITY OF RANCHO	$365,245.00	
44	MSRC	ML16008	23	PURCHASE 4 MEDIUM DUTY AND 9 HEAVY DUTY CNG VEHICLES	CITY OF POMONA	$310,000.00	
44	MSRC	ML16010	23	EXPAND CNG STATION AND INSTALL EV CHARGING STATIONS	CITY OF FULLERTON	$370,500.00	
44	MSRC	ML16018	23	PURCHASE 2 MEDIUM-DUTY VEHICLES AND IMPLEMENT BICYCLE EDUCATION	CITY OF HERMOSA BEACH	$29,520.00	
44	MSRC	ML16021	23	INSTALL EV CHARGING INFRASTRUCTURE	CITY OF SANTA CLARITA	$49,400.00	

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44	MSRC	ML16028	23	ENHANCE EXISTING CLASS 1 BIKEWAY	CITY OF AZUSA	$25,000.00	
44	MSRC	ML16032	23	IMPLEMENT FOOTHILL AND ALOSTA "COMPLETE STREETS" PROJECT	CITY OF AZUSA	$474,925.00	
44	MSRC	ML16041	23	INSTALL EV CHARGING STATIONS	CITY OF MORENO VALLEY	$20,000.00	
44	MSRC	ML16052	23	INSTALL CLASS 1 BIKEWAY	CITY OF RANCHO	$315,576.00	
44	MSRC	ML16058	23	PURCHASE 15 HEAVY-DUTY CNG VEHICLES AND INSTALL 17 EV CHARGING STATIONS	COUNTY OF LOS ANGELES	$491,898.00	
44	MSRC	ML16068	23	IMPLEMENT "OPEN STREETS" EVENT	COUNTY OF RIVERSIDE	$171,648.00	
44	MSRC	ML16074	23	INSTALL CNG STATION	CITY OF LA VERNE	$365,000.00	
44	MSRC	ML16075	23	EXPAND CNG STATION AND MODIFY MAINTENANCE FACILITY	CITY OF SAN FERNANDO	$354,000.00	
44	MSRC	MS14075	23	EXPAND CNG FUELING STATION AND MODIFY MAINTENANCE FACILITY	FULLERTON JOINT UNION HIGH SCHOOL DIST	$300,000.00	
44	MSRC	MS14079	23	INSTALL LIMITED ACCESS CNG STATION	WASTE RESOURCES INC	$100,000.00	
44	MSRC	MS14092	23	EXPAND CNG STATION	WEST COVINA UNIFIED SCHOOL DISTRICT	$124,000.00	
44	MSRC	MS16082	23	EXTEND FREEWAY SERVICE PATROL	RIVERSIDE COUNTY TRANSPORTATION COMM	$590,759.00	
44	MSRC	MS16087	23	INSTALL LIMITED ACCESS CNG STATION	BURRTEC WASTE & RECYCLING SERVICES LLC	$100,000.00	
44	MSRC	MS16089	23	IMPLEMENT EXPRESS BUS SERVICE TO ANGEL STADIUM	ORANGE COUNTY TRANSPORTATION AUTHORITY	$128,500.00	
44	MSRC	MS16090	23	IMPLEMENT TRANSIT STATION IMPROVEMENTS	LOS ANGELES COUNTY METROPOLITAN	$2,500,000.00	
44	MSRC	MS16091	23	SIGNAL SYNCHRONIZATION UPGRADES	SAN BERNARDINO ASSOCIATED GOVERNMENTS	$1,000,000.00	
44	MSRC	MS16093	23	IMPLEMENT MOBILE TICKETING SYSTEM	ORANGE COUNTY TRANSPORTATION AUTHORITY	$1,553,657.00	

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44	MSRC	MS16095	23	IMPLEMENT EXPRESS BUS SERVICE TO ORANGE COUNTY FAIR	ORANGE COUNTY TRANSPORTATION AUTHORITY	$694,645.00	
44	MSRC	MS16096	23	EV CHARGING STATIONS	SAN BERNARDINO ASSOCIATED GOVERNMENTS	$450,000.00	
44	MSRC	MS16097	23	EXPAND CNG FUELING STATION AND MODIFY MAINTENANCE FACILITY	WALNUT VALLEY UNIFIED SCHOOL DISTRICT	$250,000.00	
					Subtotal	**$39,851,568.00**	
Competitive-Executive Officer Approved							
27	INFORMATION MANAGEMENT	C17057	01	CONSOLIDATION OF MAPPING FUNCTIONS ON SCAQMD'S WEBSITE	PSOMAS	$49,936.00	
					Subtotal	**$49,936.00**	
Sole Source - Board Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16244	31	RENEWABLE NATURAL GAS PRODUCTION AND VEHICLE DEMONSTRATION PROJECT	CR&R INCORPORATED	$900,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16254	31	EVALUATE OZONE AND SECONDARY AEROSOL FORMATION FROM DIESEL FUELS	UNIVERSITY OF CALIFORNIA-BERKELEY	$106,361.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17030	31	PARTIPATE IN CALIFORNIA FUEL CELL PARTNERSHIP FOR 2016 AND PROVIDE SUPPORT FOR REGIONAL COORDINATOR	BEVILACQUA-KNIGHT INC	$135,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C17031	17	COMMERCIAL ELECTRIC LAWNMOWER AND CORDLESS ELECTRIC HANDHELD LANDSCAPE EQUIPMENT PILOT PROGRAM	CITY OF WILDOMAR	$4,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C17032	17	COMMERCIAL ELECTRIC LAWNMOWER AND CORDLESS ELECTRIC HANDHELD LANDSCAPE EQUIPMENT PILOT PROGRAM	LAKE ELSINORE UNIFIED SCHOOL DISTRICT	$4,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C17033	17	COMMERCIAL ELECTRIC LAWNMOWER AND CORDLESS ELECTRIC HANDHELD LANDSCAPE EQUIPMENT PILOT PROGRAM	JURUPA AREA RECREATION & PARK DISTRICT	$4,000.00	

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26	PLANNING RULE DEV & AREA SOURCES	C17034	17	COMMERCIAL ELECTRICL LAWNMOWER AND CORDLESS ELECTRIC HANDHELD LANDSCAPE EQUIPMENT PILOT PROGRAM	COLTON JOINT UNIFIED SCHOOL DISTRICT	$4,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C17035	17	COMMERCIAL ELECTRIC LAWNMOWER AND CORDLESS ELECTRIC HANDHELD LANDSCAPE EQUIPMENT PILOT PROGRAM	CITY OF COLTON	$4,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17059	31	DEVELOP AND DEMONSTRATE FUEL CELL EXTENDED RANGE POWERTRAIN FOR PARCEL DELIVERY TRUCKS	CALSTART, INC	$589,750.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C17079	01	SCAQMD FIELD OFFICE LEASE	CRC MANAGEMENT LLC	$503,439.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17086	17	INSTALLATION OF AIR FILTRATION SYSTEMS AT ONE OR MORE SCHOOLS	IQAIR NORTH AMERICA, INC.	$171,600.00	
26	PLANNING RULE DEV & AREA SOURCES	C17090	46	ENDOWMENT MOA FOR AIR QUALITY & CLIMATE RESEARCH TRAINING PROGRAM	UNIVERSITY OF CALIFORNIA RIVERSIDE	$1,000,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17092	31	RNG PRODUCTION AND VEHICLE DEMONSTRATION	KORE INFRASTRUCTURE, LLC	$2,500,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17142	01	STRATEGIC CONSULTING	DOUBLE NICKEL ADVISORS, LLC	$120,000.00	
44	MSRC	MS16086	23	IMPLEMENT NEW FREEWAY SERVICE PATROL	SAN BERNARDINO ASSOCIATED	$800,625.00	
					Subtotal	**$6,846,775.00**	
Sole Source - Executive Officer Approved							
35	LEGISLATIVE & PUBLIC AFFAIRS	C17041	01	EVENT PLANNING AND LOGISTICAL SERVICES FOR DR. MARTIIN LUTHER KING - DAY OF SERVICE EVENT	SNAP PRODUCTIONS	$75,000.00	
08	LEGAL	C17054	01	SUNSHINE CANYON LANDFILL ORDER FOR ABATEMENT EXPERT WITNESS SERVICES	YAZDANI & ASSOCIATES LLC	$75,000.00	

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08	LEGAL	C17066	01	LEGAL ADVICE AND COUNSEL AND REPRESENTATION WITH RESPECT TO CONFLICTS OF INTEREST AND PUBLIC LAW ISSUES	SCHEPER KIM & HARRIS LLP	$25,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17080	01	MUSIC SERVICES FOR 28TH ANNUAL CLEAN AIR AWARDS	JUSTIN VARGAS	$100.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17081	01	MUSIC SERVICES FOR 28TH ANNUAL CLEAN AIR AWARDS	LUKE BITHER	$100.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17082	01	MUSIC SERVICES FOR 28TH ANNUAL CLEAN AIR AWARDS	ANDREW ALVARADO	$100.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17083	01	MUSIC SERVICES FOR 28TH ANNUAL CLEAN AIR AWARDS	SKYLAR ALLINGHAM	$100.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17084	01	MUSIC SERVICES FOR 28TH ANNUAL CLEAN AIR AWARDS	FRANK ANDREW VALENZUELA	$100.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17085	01	MUSIC SERVICES FOR 28TH ANNUAL CLEAN AIR AWARDS	CHRISTIAN R VAZQUEZ	$100.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17094	01	STRATEGIC CONSULTING	DOUBLE NICKEL ADVISORS, LLC	$75,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17099	01	SECOND ANNUAL "ENVIRONMENTAL JUSTICE FOR ALL" CONFERENCE - PERFORMER	ELOISE LAWS	$550.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17103	01	PROVIDE STRATEGIC AND TRACTICAL CONSULTING	WM CONSULTING INC	$50,000.00	
08	LEGAL	C17131	01	CONSULTING EXPERT	KENNETH A. MANASTER	$50,000.00	
08	LEGAL	C17154	01	LEAD ABATEMENT CONSULTANT SERVICES	OCCUPATIONAL KNOWLEDGE INTERNATIONAL	$19,695.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17155	01	STATEGIC COMMUNICATIONS CONSULTING	MJB STRATEGIES	$75,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17167	01	2017 CESAR CHAVEZ DAY OF REMEMBRANCE EVENT PLANNING, FACILITATING AND STAFFING	LEE ANDREWS GROUP INC	$75,000.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
35	LEGISLATIVE & PUBLIC AFFAIRS	C17168	01	PUBLICATION OF A 4 PAGE BROADSHEET FULL-COLOR NEWSPAPER WRAP	LOS ANGELES SENTINEL, INC	$50,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17180	01	PROVIDE KEYNOTE SPEAKER SERVICES FOR THE SCAQMD MARTIN LUTHER KING, JR DAY OF SERVICE FORUM	MARYUM ALI	$5,000.00	
08	LEGAL	C17184	01	CONSULTING EXPERT	BASTLEFORD ENGINEERING & CONSULTANCY	$50,000.00	
					Subtotal	**$625,845.00**	

II. OTHER

Board Assistant

Board Administrative Committee Reviewed/Executive Officer Approved

02	GOVERNING BOARD	C17000	01	BOARD ASSISTANT SERVICES FOR DR. WILLIAM BURKE	P & L CONSULTING, LLC	$117,993.00	
02	GOVERNING BOARD	C17001	01	BOARD ASSISTANT SERVICES FOR MICHAEL ANTONOVICH	DEBRA S MENDELSOHN	$66,055.00	
02	GOVERNING BOARD	C17002	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	RUTHANNE TAYLOR BERGER	$86,000.00	
02	GOVERNING BOARD	C17003	01	BOARD ASSISTANT SERVICES FOR DR. JOSEPH LYOU	MARK ABRAMOWITZ	$41,608.00	
02	GOVERNING BOARD	C17004	01	BOARD ASSISTANT SERVICES FOR JOHN BENOIT	BUFORD A CRITES	$44,747.00	
02	GOVERNING BOARD	C17005	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	DAVID CZAMANSKE	$7,999.98	
02	GOVERNING BOARD	C17006	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	JAMES GLEN DUNCAN	$8,484.00	
02	GOVERNING BOARD	C17007	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	FRANK CARDENAS AND ASSOCIATES	$7,777.00	
02	GOVERNING BOARD	C17008	01	BOARD ASSISTANT SERVICES FOR JOE BUSCAINO	JACOB LEE HAIK	$45,812.00	
02	GOVERNING BOARD	C17009	01	BOARD ASSISTANT SERVICES FOR SHAWN NELSON	INFRASTRUCTURE GROUP, INC	$51,139.00	

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02	GOVERNING BOARD	C17010	01	BOARD ASSISTANT SERVICES FOR DR. CLARK PARKER	MARIA INIGUEZ	$38,750.00	
02	GOVERNING BOARD	C17011	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	CHUNG S. LIU	$54,873.60	
02	GOVERNING BOARD	C17012	01	BOARD ASSISTANT SERVICES FOR DR. JOSEPH LYOU	NICOLE NISHIMURA	$37,764.00	
02	GOVERNING BOARD	C17013	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	MARISA KRISTINE PEREZ	$63,119.40	
02	GOVERNING BOARD	C17014	01	BOARD ASSISTANT SERVICES FOR JANICE RUTHERFORD	COUNTY OF SAN BERNARDINO	$58,064.00	
02	GOVERNING BOARD	C17015	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	SHO TAY	$4,570.00	
02	GOVERNING BOARD	C17016	01	BOARD ASSISTANT SERVICES FOR LARRY MCCALLON	RONALD KETCHAM	$39,041.00	
02	GOVERNING BOARD	C17017	01	BOARD ASSISTANT SERVICES FOR DWIGHT ROBINSON	THOMAS A. FUENTES, JR	$13,110.00	
02	GOVERNING BOARD	C17018	01	BOARD ASSISTANT SERVICES FOR DWIGHT ROBINSON	MATTHEW AUGUST HOLDER	$26,220.67	
02	GOVERNING BOARD	C17019	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	CITY OF WILDOMAR	$31,993.00	
02	GOVERNING BOARD	C17021	01	BOARD ASSISTANCE SERVICES FOR MICHAEL CACCIOTTI	MARY ANN LUTZ	$5,250.00	
					Subtotal	**$850,370.65**	
Other - Executive Officer Approved							
16	ADMINISTRATIVE & HUMAN RESOURCES	C17053	01	EMPLOYMENT RELATIONS TRAINING	LIEBERT CASSIDY WHITMORE	$3,720.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17060		BAILMENT AGREEMENT	UNIVERSITY OF CALIFORNIA RIVERSIDE	$0.00	1
16	ADMINISTRATIVE & HUMAN RESOURCES	C17113	01	RUBIDOUX AIR MONITORING STATION	SOUTHERN CALIFORNIA EDISON	$10,554.03	

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26	PLANNING RULE DEV & AREA SOURCES	C17130	01	RULE 1147 TASK FORCE MEETING SUPPORT AFTER REVIEW OF DRAFT TECHNOLOGY ASSESSMENT	ETS INC	$837.00	
					Subtotal	**$15,111.03**	
III. SPONSORSHIPS							
Sponsorship -Executive Officer Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16389	01	CO-SPONSOR FUTUREPORTS ANNUAL CONFERENCE 2016	FUTUREPORTS	$5,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17043	01	CO-SPONSOR 2016 LOS ANGELES ENVIRONMENTAL FORUM	SOUTHERN CALIFORNIA CHINESE-AMERICAN	$2,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17045	01	CO-SPONSOR THE 1ST ANNUAL SOUTH LOS ANGELES YOUTH SUSTAINABILITY AND EMPOWERNMENT SUMMIT	CALIFORNIA GREENWORKS, INC.	$5,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17046	01	2016 CLEAN AIR CAR SHOW AND GREEN LIVING EXPO	CITY OF SOUTH PASADENA	$3,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17047	01	"YOUR LIFE IS NOW" ENVIRONMENTAL HEALTH SUMMIT	COMMUNITY PARTNERS	$2,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17051	01	COSPONSOR ULTRA-LOW NOX HEAVY-DUTY ENGINES WORKSHOP	GLADSTEIN, NEANDROSS & ASSOCIATES	$10,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17056	01	11TH ANNUAL TASTE OF SOUL 2016 FAMILY FESTIVAL	LOS ANGELES SENTINEL, INC	$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17058	01	SPONSORSHIP OF THE LOS ANGELES NATIONAL DRIVE ELECTRIC WEEK 2016	ADOPT A CHARGER, INC.	$3,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17061	01	COSPONSOR THE 2016 SANTA MONICA ALTCAR EXPO AND CONFERENCE	PLATIA PRODUCTIONS	$20,785.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17062	01	COSPONSOR THE SOUTHERN CALIFORNIA ENERGY WATER + GREEN LIVING 2016 SUMMIT	BURKE RIX COMMUNICATIONS, LLC	$5,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17067	01	SPONSORSHIP OF THE RENDEZVOUS BACK TO ROUTE 66	SAN BERNARDINO AREA CHAMBER OF COMMERCE	$3,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17073	01	16TH ANNUAL SENIOR APPRECIATION LUNCHEON	ART ACTIVE, INC	$5,000.00	

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17076	01	COSPONSOR RETHINK METHANE 2017	GLADSTEIN, NEANDROSS & ASSOCIATES	$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17088	01	COSPONSOR THE POWER OF WASTE: RENEWABLE NATURAL GAS (RNG) FOR CALIFORNIA WORKSHOP	ENERGY VISION, INC.	$5,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17089	01	COSPONSOR THE CALETC 2016 LOS ANGELES AUTO SHOW EVENTS	CALIFORNIA ELECTRIC TRANSPO. COALITION	$8,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17093	01	SBCCOG 18TH ANNUAL GENERAL ASSEMBLY	SOUTH BAY CITIES	$2,500.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17095	01	COSPONSOR THE HYDROGEN AND FUEL CELLS IN THE PORTS WORKSHOP	CALIFORNIA HYDROGEN BUSINESS COUNCIL	$2,500.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17179	01	SPONSORSHIP OF PIONEER OF AFRICAN ACHIEVEMENT AWARD DINNER	LOS ANGELES BROTHERHOOD CRUSADE	$6,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C17182	01	SPONSORSHIP OF HAPPY 10TH "NEW" JPy	JPY-LA	$1,000.00	
					Subtotal	**$163,785.00**	

IV. MODIFICATIONS

Board Approved

08	LEGAL	C12075	01	ENVIRONMENTAL LAW	WOODRUFF SPRADLIN & SMART	$50,000.00	
08	LEGAL	C12075	01	ENVIRONMENTAL LAW	WOODRUFF SPRADLIN & SMART	$200,000.00	
08	LEGAL	C12128	01	EMPLOYMENT & LABOR LAW	FISHER & PHILLIPS, LLP	$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12308	40	PERFORM WEBSITE SERVICES FOR THE CNGVP	GLADSTEIN, NEANDROSS & ASSOCIATES	$15,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C12507	01	FACILITY LEASE AGREEMENT	CITY OF DIAMOND BAR	$0.00	3
08	LEGAL	C12702	01	LEGAL ADVICE FOR LAWSUITS AND ADMINISTRATIVE PROCEEDINGS	SHUTE MIHALY & WEINBERGER LLP	$100,000.00	
08	LEGAL	C14191	01	PROVIDE LEGAL SERVICES CONCERNING EXIDE BANKRUPTCY PROCEEDINGS	KLEE, TUCHIN, BOGDANOFF & STERN LLP	$150,000.00	

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27	INFORMATION MANAGEMENT	C15446	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	SIERRA CYBERNETICS INC	$215,000.00	
27	INFORMATION MANAGEMENT	C15447	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	AGREEYA SOLUTIONS, INC	$33,000.00	
27	INFORMATION MANAGEMENT	C15468	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	VARSUN ETECHNOLOGIES GROUP, INC	$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15541	56	ENHANCED FLEET MODERNIZATION PROGRAM	FOUNDATION FOR CALIF COMMUNITY COLLEGES	$30,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15586	56	ENHANCED FLEET MODERNIZATION PROGRAM	OPUS INSPECTION INC	$30,000.00	
27	INFORMATION MANAGEMENT	C15587	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	PRELUDE SYSTEMS, INC.	$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15614	17	COMMERCIAL ELECTRIC LAWNMOWER PILOT PROGRAM WITHIN SAN BERNARDINO	MEAN GREEN PRODUCTS LLC	$216,079.00	
20	MEDIA OFFICE	C16190	36	GOOGLE AD CAMPAIGN	GOOGLE, INC	$250,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16205	31	DEVELOP, INTEGRATE & DEMO ULTRA-LOW EMISSION 12L NATURAL GAS ENGINES FOR ON-ROAD HEAVY-DUTY VEHICLES	CUMMINS WESTPORT INC	$1,000,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G13212	80	PURCHASE 6 CNG SCHOOL BUSES WITH FIRE SUPPRESSION SYSTEMS AND ASSOCIATED INFRASTRUCTURE	FULLERTON JOINT UNION HIGH SCHOOL DIST	$0.00	11
44	MSRC	MS14089	56	ENHANCED FLEET MODERNIZATION PROGRAM	TOP SHELF CONSULTING LLC	$30,020.00	
					Subtotal	**$2,519,099.00**	

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Board Assistant							
Board Administrative Committee Reviewed/Executive Officer Approved							
02	GOVERNING BOARD	C17018	01	BOARD ASSISTANT SERVICES FOR DWIGHT ROBINSON	MATTHEW AUGUST HOLDER	$3,022.49	
					Subtotal	**$3,022.49**	
Executive Officer Approved							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09353	32	REPOWER 1 GRADER, 5 REFUSE COMPACTORS, AND 3 DOZERS	LOS ANGELES COUNTY SANITATION DISTRICTS	$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	STAMPRAG MEMBER SERVICES	CENTER FOR CONTINUING STUDY-CA ECONOMY	$13,500.00	
08	LEGAL	C10052	01	PROVIDE EMPLOYEE RELATIONS LITIGATION SERVICES	LIEBERT CASSIDY WHITMORE	$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C10706	36	REDUCTION OF GREENHOUSE GASES THROUGH REFORESTATION	NATIONAL FOREST FOUNDATION	$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	C11411	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CENTURY SAND & GRAVEL INC	$0.00	6
08	LEGAL	C11594	01	LEGAL REPRESENTATION	PERKINS COIE LLP	$10,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C11607	01	NATURAL GAS PURCHASE AGREEMENT	STATE OF CALIFORNIA	$27,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C11613	49	GREENHOUSE REDUCTION PROJECT	LOS ANGELES CONSERVATION CORPS	$0.00	6
08	LEGAL	C12128	01	EMPLOYMENT & LABOR LAW	FISHER & PHILLIPS, LLP	$0.00	6
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

South Coast Air Quality Management District
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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13056	27	INSTALLATION OF UP TO 2MW SOLAR PV, UP TO 2MWh OF LITHIUM BATTERY STORAGE SYSTEMS AND ELECTRIC TROLLEY	UNIVERSITY OF CALIFORNIA RIVERSIDE	$0.00	6
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	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13194	01	PROVIDE TECHNICAL ASSISTANCE WITH ALTERNATIVE FUELS, RENEWABLE ENERGY AND ELECTRIC VEHICLES	CLEAN FUEL CONNECTION INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13396	31	DEVELOP AND DEMONSTRATE 4 CLASS 8 ZERO-EMISSION ELECTRIC TRUCKS - FIRST INVOICE PAYMENT PER NANCY COLE 7/5/13	TRANSPORTATION POWER, INC.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13408	31	DEMONSTRATION OF BUILDING INTEGRATION OF ELECTRIC VEHICLES, PHOTOVOLTAICS, AND STATIONARY FUEL CELLS	UNIVERSITY OF CALIFORNIA - IRVINE	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13425	58	TRAFFIC SIGNAL SYNCHRONIZATION PROJECT	CITY OF COACHELLA	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13431	27	DEMONSTRATE STAGED COMBUSTION HYDROGEN ASSISTED EMISSION CONTROL SYSTEM	GAS TECHNOLOGY INSTITUTE	$0.00	4
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13431	27	DEMONSTRATE STAGED COMBUSTION HYDROGEN ASSISTED EMISSION CONTROL SYSTEM	GAS TECHNOLOGY INSTITUTE	$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C14171	31	AIR POLLUTION HEALTH EFFECTS - IN-UTERO EXPOSURES TO TRAFFIC RELATED POLLUTANTS	SOUTHERN CALIFORNIA RESEARCH	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14329	81	PROP 1B TRUCK REPLACEMENT PROGRAM	M & V EQUIPMENT, LLC	$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14392	81	PROP 1B TRUCK REPLACEMENT PROGRAM	P.A. PARKER, INC.	$0.00	6

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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14530	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ESQ DELIVERY SERVICES	$0.00	11
08	LEGAL	C14681	01	OFFICE OF GENERAL COUNSEL CASE MANAGEMENT SYSTEM	COURTVIEW JUSTICE SOLUTIONS, INC	$25,862.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14684	31	CONDUCT HYDROGEN STATION SITE EVALUATIONS FOR SITE CERTIFICATION FOR COMMERCIAL SALE OF HYDROGEN	CALIFORNIA DEPARTMENT OF FOOD & AGRIC.	$0.00	6
50	ENGINEERING AND PERMITTING	C15279	01	EXIDE MITIGATION PLAN FOR CONSTRUCTION OF RISK REDUCTION MEASURES	TETRA TECH BAS	$0.00	11
50	ENGINEERING AND PERMITTING	C15279	01	EXIDE MITIGATION PLAN FOR CONSTRUCTION OF RISK REDUCTION MEASURES	TETRA TECH BAS	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15288	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PMG TRUCKING LLC	$0.00	11
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	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15382	31	INSTALL ELECTRIC CHARGING INFRASTRUCTURE	CHARGEPOINT, INC	$0.00	6
27	INFORMATION MANAGEMENT	C15446	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	SIERRA CYBERNETICS INC	$0.00	6
08	LEGAL	C15485	01	OUTSIDE COUNSEL - CONFLICT OF INTEREST	OLSON, HAGEL & FISHBURN LLP	$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C15577	01	PROVIDE SCIENTIFIC, TECHNICAL AND MODELING PEER REVIEW ADVISORY GROUP SERVICES	JIN HUANG	$0.00	6
08	LEGAL	C15584	01	PROVIDE EXPERT CONSULTING IN THE AREA OF RULES 1304.2 AND 1304.3	FRANK A. WOLAK	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15607	31	INNOVATIVE TRANSPORTATION SYSTEM SOLUTIONS FOR NOX REDUCTIONS IN HEAVY-DUTY FLEETS	UNIVERSITY OF CALIFORNIA RIVERSIDE	$0.00	6

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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15610	01	CONDUCT ENGINEERING SERVICES AT SCAQMD HEADQUARTERS FOR THE UPGRADE AND EXPANSION OF SCAQMD'S ELECTRIC VEHICLE CHARGING INFRASTRUCTURE	GOSS ENGINEERING, INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15623	31	PILOT STUDY-OZONE AND SECONDARY ORGANIC AEROSOL (SOA) FORMATION FROM GASOLINE AND DIESEL COMPOUNDS	UNIVERSITY OF CALIFORNIA RIVERSIDE	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15628	54	ADVANCED OPTICAL REMOTE SENSING TECHNOLOGIES AT REFINERIES, OTHER VOC SOURCES AND MARINE VESSELS	FLUXSENSE AB	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15635		DEVELOPMENT AND DEMONSTRATION OF ZERO-EMISSION FUEL CELL RANGE EXTENDED ELECTRIC DRAYAGE TRUCK AND GOODS MOVEMENT OPERATIONS BETWEEN THE PORTS OF LOS ANGELES AND LONG BEACH AND THE NEAR DOCK RAIL YARDS AND WAREHOUSES	CENTER FOR TRANSPORTATION AND	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15636	31	EVALUATE PEV UTILIZATION THROUGH ADVANCED CHARGING STRATEGIES IN A SMART GRID SYSTEM	UNIVERSITY OF CALIFORNIA RIVERSIDE	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15637	54	ADVANCED OPTICAL REMOTE SENSING TECHNOLOGIES AT REFINERIES, OTHER VOC SOURCES AND MARINE VESSELS	KASSAY FIELD SERVICES, INC.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15638	54	ADVANCED OPTICAL REMOTE SENSING TECHNOLOGIES AT REFINERIES, OTHER VOC SOURCES AND MARINE VESSELS	ATMOSFIR OPTICS LTD	$0.00	6
08	LEGAL	C15651	01	ENVIRONMENTAL / GOVERNMENTAL LAW	BEST BEST & KRIEGER	$10,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15653	54	ADVANCED OPTICAL REMOTE SENSING TECHNOLOGIES AT REFINERIES, OTHER VOC SOURCES AND MARINE VESSELS	NPL MANAGEMENT LIMITED	$0.00	6

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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
08	LEGAL	C15658	01	PROVIDE EXPERTING CONSULTING SERVICES WITH REGARD TO TESORO REFINERY PROJECT	PETROTECH CONSULTANTS LLC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15680	31	DEVELOP A DETAILED TECHNOLOGY AND ECONOMICS BASED ROADMAP FOR THE ADOPTION OF ADVANCED COMMERCIAL VEHICLE TECHNOLOGIES TO REDUCE NITROGEN OXIDES (NOx) AND GREENHOUSE GAS (GHG) EMISSIONS THROUGH 2050 WITH EMPHASIS ON THE YEARS 2023 AND 2032.	NATIONAL RENEWABLE ENERGY LAB	$0.00	6
20	MEDIA OFFICE	C16048	01	GOOGLE ADVERTISING CAMPAIGN	GROUP 1 PRODUCTIONS	$250.00	
20	MEDIA OFFICE	C16048	01	GOOGLE ADVERTISING CAMPAIGN	GROUP 1 PRODUCTIONS	$1,800.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16056	80	REPLACE 10 AND PURCHASE 1 DIESEL LOCOMOTIVE	SO CALIFORNIA REGIONAL RAIL AUTHORITY	$0.00	1
35	LEGISLATIVE & PUBLIC AFFAIRS	C16062	01	10TH ANNUAL TASTE OF SOUL 2015 FAMILY FESTIVAL ASSOCIATE SPONSORSHIP	LOS ANGELES SENTINEL, INC	$0.00	6
08	LEGAL	C16063	01	SPECIALIZED LEGAL SERVICES	HOGAN LOVELLS US LLP	$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C16064	01	SUBSURFACE GEOTECHNICAL INVESTIGATION	COTTON, SHIRES AND ASSOCIATES, INC.	$25,500.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C16074	01	ENVIRONMENTAL JUSTICE COMMUNITY PARTNERSHIP (THE PARTNERSHIP) INITIATIVE	LEE ANDREWS GROUP INC	$10,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C16080	01	ENHANCEMENT OF WEB-BASED ANNUAL EMISSIONS REPORTING TOOL	ECOTEK INC	$39,223.00	
26	PLANNING RULE DEV & AREA SOURCES	C16082	01	REVIEW OF SECTORAL ECONOMIC IMPACT ANALYSIS FOR SMALL SCALE IMPACTS	INDUSTRIAL ECONOMICS INCORPORATED	$0.00	6
35	LEGISLATIVE & PUBLIC AFFAIRS	C16138	01	ASSIST SCAQMD WITH THE PRODUCTION OF A PUBLIC SERVICE ANNOUNCEMENT	SAN BERNARDINO COMMUNITY COLLEGE DIST.	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16167	32	REPOWER OF 3 OFF-ROAD VEHICLES	A & I ROCK CO., INC.	$0.00	6
27	INFORMATION MANAGEMENT	C16204	01	PHONE SYSTEM MAINTENANCE SERVICES FOR FY'15-16	EPOCH UNIVERSAL, INC	$30,000.00	

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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
26	PLANNING RULE DEV & AREA SOURCES	C16214	01	PROVIDE ASSISTANCE WITH CEQA SERVICES FOR SCAQMD RULE PROJECTS	PLACEWORKS INC	$0.00	6
50	ENGINEERING AND PERMITTING	C16239	01	STUDY ALTERNATIVES TO HYDROFLOURIC ACID USED AS A CATALYST IN ALKYLATION PROCESSES AT REFINERIES	NORTON ENGINEERING CONSULTANTS, INC	$0.00	6
08	LEGAL	C16258	01	COUNSEL; BANKRUPTCY	DRAY, DYEKMAN, REED & HEALEY PC	$5,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16294	81	PROP 1B TRUCK REPLACEMENT PROGRAM	YOUNGMAN SA	$0.00	11
16	ADMINISTRATIVE & HUMAN RESOURCES	C16313	01	PAINT EXTERIOR ROLLUP DOORS AND SOLID PANEL ENTRY DOORS	MEAR CONSTRUCTION INC	$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16328	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRACEY POTTER	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16360	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CONRAD NOVACK	$0.00	11
08	LEGAL	C16392	01	LEGAL ADVICE AND REPRESENTATION FOR SO CAL GAS LITIGATION	HUANG YBARRA SINGER & MAY LLP	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C17024	27	PROVIDE UP TO 3,000 ELECTRIC POWERED LAWN MOWERS FOR THE LAWN MOWER EXCHANGE EVENTS FOR THE RESIDENTS OF THE SOUTH COAST AIR BASIN	CHERVON NORTH AMERICA, INC	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16113	80,17	LOWER EMISSION SCHOOL BUS REPLACEMENT PROGRAM	LOS ALAMITOS UNIFIED SCHOOL DISTRICT	$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G16133	80	PURCHASE 1 CNG SCHOOL BUS WITH A FIRE SUPPRESSION SYSTEM AND ASSOCIATED INFRASTRUCTURE	WALNUT VALLEY UNIFIED SCHOOL DISTRICT	$0.00	11
44	MSRC	ML09036	23	PURCHASE 35 HEAVY-DUTY NATURAL GAS VEHICLES	CITY OF LONG BEACH	$0.00	6
44	MSRC	ML11029	23	INSTALL LPG FUELING STATION AND UPGRADE EXISTING CNG STATION	CITY OF SANTA ANA	$0.00	6
44	MSRC	ML12041	23	ELECTRIC VEHICLE CHARGING INFRASTRUCTURE	CITY OF ANAHEIM	$0.00	6

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	MSRC	ML14021	23	INSTALL A CLASS 1 BIKEWAY	COUNTY OF RIVERSIDE	$0.00	6
44	MSRC	ML14030	23	BICYCLE INFRASTRUCTURE & EDUCATION	COUNTY OF LOS ANGELES	$0.00	6
44	MSRC	ML14054	23	UPGRADE MAINTENANCE FACILITY	CITY OF TORRANCE	$0.00	11
44	MSRC	ML14054	23	UPGRADE MAINTENANCE FACILITY	CITY OF TORRANCE	$0.00	6
44	MSRC	ML14056	23	INSTALL 15.9 MILES OF CLASS II BICYCLE LANE IMPROVEMENTS	CITY OF REDLANDS	$0.00	6
44	MSRC	ML16048	23	INSTALL A BICYCLE LOCKER AND EV CHARGING STATIONS	CITY OF PLACENTIA	$0.00	6
44	MSRC	ML16051	23	IMPLEMENT 'OPEN STREETS' EVENT	CITY OF SOUTH PASADENA	$0.00	11
44	MSRC	MS12080	23	EXPAND CNG STATION	CITY OF PASADENA	$0.00	6
44	MSRC	MS14058	23	SIGNAL SYNCHRONIZATION PARTNERSHIP PROGRAM	ORANGE CO TRANSPORTATION	$0.00	6
44	MSRC	MS14090	23	EXPAND CNG FUELING STATION	CITY OF MONTEREY PARK	$0.00	11
44	MSRC	MS16001	23	IMPLEMENT TRANSIT SERVICE TO DODGER STADIUM	LOS ANGELES COUNTY METROPOLITAN	$0.00	11
					Subtotal	**$198,135.00**	

V. TERMINATED CONTRACTS-PARTIAL/NO WORK PERFORMED

44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12233	81	INSTALLATION OF A GRID-BASED, SHORE POWER SYSTEMS AT UP TO 12 BERTHS AT THE PORT OF LONG BEACH	PORT OF LONG BEACH	-$1,292,464.28	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14178	32	REPOWER 4 OFF-ROAD VEHICLES	DAN COPP CRUSHING CORPORATION	-$440,757.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14348	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOUTHERN COUNTIES TERMINALS	-$55,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15035	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CLAUDIA HORTA	-$40,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15402	81	PROP 1B TRUCK REPLACEMENT PROGRAM	R.W. ZANT CO.	-$100,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16148	32	REPOWER 1 OFF-ROAD VEHICLE	JKM EQUIPMENT INC	-$14,923.64	7

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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C16196	32	REPLACEMENT OF 8 OFF-ROAD VEHICLES	SUNNY SLOPE TREE FARM INC	-$62,400.00	7
02	GOVERNING BOARD	C17017	01	BOARD ASSISTANT SERVICES FOR DWIGHT ROBINSON	THOMAS A. FUENTES, JR	-$3,022.00	7
44	MSRC	ML14022	23	PURCHASE 10 HEAVY-DUTY NATURAL GAS VEHICLES	COUNTY OF LOS ANGELES	-$30,000.00	7
					Subtotal	**-$2,038,566.92**	

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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE

SPECIAL FUNDS

17	ADV. TECH, OUTREACH & EDU FUND
22	AIR QUALITY IMPROVEMENT FUND
23	MSRC FUND
27	AIR QUALITY INVESTMENT FUND
31	CLEAN FUELS FUND
32	CARL MOYER FUND - SB1107 ACCOUNT
33	SCHOOL BUS REPLACEMENT PROGRAM
34	ZERO EMISSION VEHICLE INCENTIVE PROGRAM
35	AES SETTLEMENT PROJECTS FUND
36	RULE 1309.1 PRIORITY RESERVE FUND
37	CARB ERC BANK FUND
38	LADWP SETTLEMENT PROJECTS FUND
39	STATE EMISSIONS MITIGATION FUND
40	NATURAL GAS VEHICLE PARTNERSHIP FUND
45	CBE/CBO SETTLEMENT AGREEMENT FUND
46	BP ARCO SETTLEMENT FUND
48	HEALTH EFFECTS RESEARCH FUND
49	CEQA GHG MITIGATION FUND
50	DOE ARRA-PLUG-IN HYBRID ELECTRIC VEHICLES
51	DOE ARRA-LNG CORRIDOR EXPANSION
52	TRAPAC SCHOOL AIR FILTRATION
53	EMISSION REDUCTION AND OUTREACH FUND
54	RULE 1118 MITIGATION FUND
56	HEROS II PROGRAM FUND
58	AB1318 MITIGATION FEES FUND
61	ADVANCED TECHNOLOGY GOODS MOVEMENT FUND
63	HYDROGEN FUELING INFRASTRUCTURE NETWORK 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

FOOTNOTES

1	NO FIXED VALUE
2	RATES VARY - NO FIXED VALUE
3	REVENUE CONTRACT - NO AMOUNT SHOWN
4	NO COST - COST REALLOCATION
5	CHANGED TO EMPLOYEE STATUS
6	NO COST- TIME EXTENSION
7	DE-OBLIGATION OF FUNDING
8	COMPETITIVE SOLICITATION ISSUED BY ANOTHER GOVERNMENT AGENCY
9	NO COST - AIR MONITORING/LICENSE AGR
10	CNG VEHICLE PARTNERSHIP SELECTION
11	NO COST - CHANGE IN TERMS
12	FEDERAL GOVERNMENT PASS-THRU
13	AT DIRECTION OF LEGISLATIVE COMMITTIEE
14	OPTIONAL YEAR RENEWAL/MULTI-YR CONTRACT
15	TRUCK GRANT PAID TO CASCADE SIERRA SOLUTIONS THROUGH LEASE-TO-OWN PROGRAM. THIS CONTRACT IS FOR OPERATION AND REPORTING ONLY.
16	AMOUNT UTILIZED MAY BE LESS THAN CONTRACT AMOUNT.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 22

PROPOSAL: Report of RFPs Scheduled for Release in March

SYNOPSIS: This report summarizes the RFPs for budgeted services over $75,000 scheduled to be released for advertisement for the month of March.

COMMITTEE: Administrative, February 10, 2017; Recommended for Approval

RECOMMENDED ACTION:
Approve the release of RFPs for the month of March.

Wayne Nastri
Executive Officer

MBO:lg

Background
At its January 8, 2010 meeting, the Board approved a revised Procurement Policy and Procedure. Under the revised policy, RFPs 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 RFPs 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 RFP, 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 3, 2017.

Outreach
In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFPs 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 RFPs 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 RFPs Scheduled for Release in March 2017

March 3, 2017 Board Meeting
Report on RFPs Scheduled for Release on March 3, 2017

(For detailed information visit SCAQMD's website at http://www.aqmd.gov/grants-bids following Board approval on March 3, 2017)

RESEARCH AND DEVELOPMENT OR SPECIAL TECHNICAL EXPERTISE

RFP #P2017-13 Issue Request for Proposal to Hire Outside Counsel WIESE/3460

From time to time the SCAQMD requires the assistance of outside litigation counsel having expertise and experience in areas including, but not limited to, the California Environmental Quality Act, air quality laws, administrative law, the Brown Act, representation of government agencies, constitutional issues, Clean Air Act issues, and complex environmental litigation. A prequalified list was approved by the Governing Board in 2014. In addition, the Hearing Board occasionally requires the assistance of outside counsel for advice on these and related issues such as quasi-judicial hearings, the California Administrative Procedures Act, the California Fair Political Practices Act and constitutional issues related to air pollution law and jurisdiction of local agency hearing boards and for representation when its decisions are challenged in court proceedings. This RFP has two purposes: to solicit qualified law firms or sole practitioners in order to establish a prequalified list that General Counsel may use to represent the SCAQMD in ongoing and possible future litigation where outside counsel is required; and, to solicit qualified firms or sole practitioners to advise and represent the Hearing Board. General Counsel and the Hearing Board will use different firms to avoid conflicts of interest. The list will be valid for a three-year period. Funding for this contract will be requested in the FY 2017-18 budget and in subsequent fiscal year budgets in the amount of $250,000 annually for up to three years.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 23

PROPOSAL: Status Report on Major Ongoing and Upcoming Projects for Information Management

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 planned projects.

COMMITTEE: Administrative, February 10, 2017; Recommended for Approval

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

JCM:MAH:OSM:agg

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 ongoing and expected to be initiated within the next six months. Information provided for each project includes a brief project description and the schedule associated with known major milestones (issue RFP/RFQ, execute contract, etc.).

Attachment
Information Management Status Report On Major Ongoing and Upcoming Projects During the Next Six Months

ATTACHMENT
March 3, 2017 Board Meeting
Information Management Status Report On Major Ongoing and Upcoming Projects During the Next Six Months

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
Website Evaluation & Improvements	Conduct a detailed review of the SCAQMD website to identify improvements/ enhancements that can further site usability and implement the items approved by the Administrative Committee. Improvements include a new custom calendar and changes to the navigation and content organization	$117,475	• Calendar development done • Home page development done	• Development of master pages and widgets in process • Beta site completion expected by early February
Consolidation of Mapping Functions on SCAQMD's Website	Conduct an assessment of GIS needs across the agency and develop an implementation plan for consolidating GIS functionality across the agency with a road map of projects to reach that goal	$49,936	• Needs assessment completed • Draft implementation plan outline done	• Final System Design incorporating comments to be delivered week of January 31 • Draft implementation plan expected end of February • Post-contract, IM will begin implementing recommendations and incorporating into improved website
OnLine Permitting	• New Web Application Development project to automate the 400A Form Filing process	$200,000	Released Task Order October 2016	Business Process Definition work in progress
	• New Web Application Development project to automate the processing of Dry Cleaners, Gas Stations, and Spray Booth applications	$250,000	Project Started December 2016	Expected completion and deployment June 2017

	• Bay Area Software Evaluation - Assist Permitting Systems Staff in assessment of the Bay Area Software solution for use by SCAQMD Permitting staff and the public	To Be Determined	Received test account from Bay Area to access the demo site and experiment with the BAAQMD on line permit processing tools	Begin initial review of Internal Dashboard and Customer Service Portals. Currently working to understand overall system functionality and to resolve data submission and other errors encountered during initial review
Information Technology Review	RFP for Information Technology review to help determine opportunities for hardware, system and software modernization	$75,000	Released RFP December 2, 2016 Four proposals received for panel review	Award contract on March 3, 2017
Permit Dashboard Statistics	• High level: New dashboard displaying monthly count of pending applications by type (RECLAIM, Title V and Reg. II)	Costs Unbudgeted, Developed internally. Cost of Highcharts software $1,320	Dashboard developed internally and submitted for review and approval October 2016	Initial version live online as of Jan 20, 2017
	• Detailed: New Web Application to allow engineers to update the intermediate status of applications, and a modification of the FIND or other GIS application to display the updated status to the applicant and the public	Costs Unbudgeted, TBD after requirements are known	Initial requirements meeting held Aug. 2016. Staff identifying and finalizing intermediate statuses, method of data capture and other user requirements	Continued biweekly follow-up to obtain user requirements needed for design and development work

Network Core Switch and Router Replacement	Replace the existing voice and data network core switch and router, which is no longer fully supported by the manufacturer; the new core switch and router will deliver enhanced functionality with additional bandwidth and speed	$225,000	Released RFP October 7, 2016 Awarded contract January 6, 2017 and equipment ordered	Complete implementation end of April 2017
Agenda Tracking System Replacement	Replace the aging custom agenda tracking system with a state-of–the-art, cost-effective Enterprise Content Management (ECM) system, which is fully integrated with OnBase, our agency-wide ECM system	$86,600	Released RFP December 4, 2015 Awarded contract April 1, 2016	Complete implementation May 1, 2017
Replace Your Ride	New Web Application to allow residents to apply for incentives to purchase newer, less-polluting vehicles	$175,000	Task order issued and awarded October 2016. Development work initiated December 2016	Requirements gathering and detail design work in progress
Emission Reporting System	Upgrade the outdated modem-based emission reporting system to allow internet-based reporting with up-to-date tools and methodology	$242,000	Detailed planning and architecture sessions in progress in preparation for task order release	Task order set to start. Board approval scheduled for March 3, 2017
Web Application and CLASS Systems Maintenance and Support	On demand support for minor enhancements, upgrades, and maintenance of the SCAQMD suite of CLASS systems and Web Applications, Web Services, and Web Application Program Interfaces (API's)	$103,000	Planning sessions in progress to finalize and prioritize work items for the upcoming period	Task order set to start. Board approval scheduled for March 3, 2017
Air Quality Index Rewrite and Migration	Develop a new Web Service and/or Web API to migrate the Air Quality Index function from the FORTRAN computer to STA's DMS system.	$60,000	Work statement development in progress in preparation for task order release	Task order set to start. Board approval scheduled for March 3, 2017

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 25

REPORT: Administrative Committee

SYNOPSIS: The Administrative Committee met on Friday, February 10, 2017. The Committee discussed various issues detailed in the Committee report. The next Administrative Committee meeting is scheduled for Friday, March 10, 2017 at 10:00 a.m.

RECOMMENDED ACTION:
Receive and file.

Dr. William A. Burke, Chair
Administrative Committee

nv

Attendance: Attending the February 10, 2017 meeting were Committee Vice Chair Ben Benoit and Committee Member Judith Mitchell at SCAQMD headquarters, and Committee Chair Dr. William A. Burke and Committee Member Dr. Clark E. Parker, Sr. via videoconference.

ACTION/DISCUSSION ITEMS:

1. **Board Members' Concerns:** None to report.

2. **Chairman's Report of Approved Travel:** As noted on the travel report, Dr. Parker met with State Legislators regarding the AQMP in Sacramento, on January 18-20, 2017. Councilmember Robinson will be attending the 2017 Rethink Methane Symposium as it relates to renewable natural gas, in Sacramento, February 21-22, 2017. Dr. Parker added that he will be traveling in late February to Washington, D.C. to meet with legislators.

3. **Approval of Compensation for Board Member Assistant(s)/Consultant(s):** Executive Officer Wayne Nastri reported that Board Consultant Buford Crites will continue as a Board Consultant, but to Supervisor Ashley. Supervisor Rutherford has selected Mark Taylor as her Board Consultant.

Moved by Benoit; seconded by Mitchell, unanimously approved.

Ayes: Benoit, Mitchell, Dr. Parker, Dr. Burke
Noes: None
Absent: None

4. **Report of Approved Out-of-Country Travel:** None to report.

5. **Status Report on Major Ongoing and Upcoming Projects for Information Management:** Deputy Executive Officer/Chief Administrative Officer Michael O'Kelly reported that the status report includes major automation contracts and planned projects for ongoing and future projects. (No motion required.)

6. **Execute Administrative Service Agreement with Los Angeles County Employees Retirement Association to Continue to Administer Healthcare and Death Benefits for SCAQMD Retirees Participating in Los Angeles County Employees Retirement Association:** Mr. O'Kelly reported that this item is to request authority to execute an administrative services agreement with Los Angeles County Employees Retirement Association (LACERA). At the time that SCAQMD was formed, the majority of employees were with LACERA. Most current employees are now with San Bernardino County Employees Retirement Association (SBCERA). There are 63 retirees and/or beneficiaries that are participating in LACERA and have been receiving health care and death benefits for a number of decades. SCAQMD will continue to pay $20,000 per month for the 63 retirees and their beneficiaries. $240,000 is budgeted every year and the number and participants are expected to decline over time. Dr. Parker inquired how are the benefits paid without a formalized agreement? Mr. O'Kelly responded benefits were to be paid based on a 1982 Governing Board Resolution. In the past 34 years, authority has been provided through the budget and discussed at each of the budget workshops. Councilmember Mitchell inquired since death benefits are not offered under SBCERA, there would be a liability? Mr. O'Kelly responded that is correct. Councilmember Mitchell inquired what is the liability? Mr. O'Kelly responded approximately $4 million with the projection based on the expected lifetime of current retirees and beneficiaries, assuming health care costs increase.

Moved by Mitchell; seconded by Parker, unanimously approved.

Ayes: Benoit, Mitchell, Dr. Parker, Dr. Burke
Noes: None
Absent: None

7. **Report of RFPs Scheduled for Release in March:** Mr. O'Kelly reported that this item is to request an RFP to establish a qualified list of outside counsel.

Moved by Parker; seconded by Mitchell, unanimously approved.

Ayes: Benoit, Mitchell, Dr. Parker, Dr. Burke
Noes: None
Absent: None

8. **Amend Contracts to Provide Short- and Long-Term Systems Development, Maintenance and Support Services:** Mr. O'Kelly reported that this item requests authority to execute amendments to two contracts for systems development services. These were contracts previously approved by the Board through a prequalified RFP and the funds have been budgeted. These are for three projects: to replace the modem-based emissions reporting system, maintenance support for the CLASS system and modernization of the system used for calculating the air quality index.

Moved by Mitchell; seconded by Benoit, unanimously approved.

Ayes: Benoit, Mitchell, Dr. Parker, Dr. Burke
Noes: None
Absent: None

9. **Execute Contract for Information Technology Review**: Mr. O'Kelly reported that this is a request to execute a contract for the information technology review as requested by the Administrative Committee. After issuance of an RFP, four proposals were received, two of which didn't meet the minimum technical score. The two that did meet the minimum technical score were very close in cost. Sunera LLC is being recommended due to a higher technical score.

Moved by Mitchell; seconded by Benoit, unanimously approved.

Ayes: Benoit, Mitchell, Dr. Parker, Dr. Burke
Noes: None
Absent: None

10. **Execute Contracts with Consultants to Provide AB 2588 Assistance**: Planning & Rules Manager Ian MacMillan reported that this item is to seek assistance from multiple contractors to assist with the AB 2588 program, primarily with implementation of the updated health risk assessment guidance from Office of Environmental Health Hazard Assessment (OEHHA). The initial contract will be with six contractors for a two-year period with an option to

extend once a year over the next two years with the total amount at $1,000,000. The funds for this effort will come out of the Air Toxics Hot Spots Fund, with revenues paid into the fund from Toxics Hot Spots facilities. Councilmember Mitchell inquired about the contractors' responsibilities. Mr. MacMillan responded that the contractors will help review AB 2588 toxics inventories and health risk assessment (HRA) reports. Dr. Burke inquired is it a requirement of the bill to hire contractors and are the contractors hired before the demand increases? Mr. MacMillan responded that there is a requirement that the reports be reviewed and approved, but there is no specific requirement to hire contractors. Staff is anticipating that the upcoming four-year period will have an increased workload, due to the updated risk assessment guidance from the state which determined increased toxic risks by a factor of 3 due to evidence of adverse health impacts on children and their exposure. For the same emissions level, the risk is now known to be about 3 times what was previously estimated. With facilities coming through the AB 2588 program over the next four years, the risk might have been 3 in a million and now it's going to be 10 in a million, resulting in additional requirements placed on the entire program. Mr. MacMillan added there are a number of adjustments that have been made to the program over the last few years, one of which was the voluntary risk reduction program that was approved recently through Rule 1402. Dr. Parker inquired how many consultants are assigned to a particular project? Mr. MacMillan responded small projects with a contractor could take a few days work, while larger projects with several contractors may take up to several weeks. Councilmember Mitchell inquired why there are many contractors and if is it due to different expertise. Mr. MacMillan responded that facilities want to have a broad ability to pick from consultants that don't have a conflict of interest, and some will have different expertise in different industrial categories. Mr. Nastri asked Mr. MacMillan to elaborate on the timeline , and what would happen to process times if contractors are not hired. Mr. MacMillan responded that typically, a facility will take approximately six months to prepare an HRA. The review process by statute is up to a year to review and approve an HRA. Councilmember Mitchell inquired what occurs after the HRA has been reviewed? Mr. MacMillan responded that once an HRA has been approved by the SCAQMD, it then goes to OEHHA for review, which can take up to six months. After approval of an HRA, if the risk is above SCAQMD thresholds, then a public notification or risk reduction may be required, resulting in another report on how to reduce their risks, which then goes through the same review/approval process and then SCAQMD continues to ensure that the facility implements that risk reduction within a two-and-a-half year period. Councilmember Mitchell inquired are they required to do a risk reduction? Mr. MacMillan responded yes, the risk reduction requirements are already required under Rule 1402 and under statute.

Moved by Mitchell; seconded by Benoit, unanimously approved.

Ayes: Benoit, Mitchell, Dr. Parker, Dr. Burke
Noes: None
Absent: None

11. **Recommendation to Appoint Member to SCAQMD Environmental Justice Advisory Group:** Deputy Executive Officer Legislative, Public Affairs, & Media Derrick Alatorre reported that this item is to appoint Kerry Doi to the Environmental Justice Advisory Group. Mr. Kerry Doi is currently the President & CEO of Pacific Asian Consortium in Employment. He's a Board Member in the Los Angeles Housing Partnership and the California Community Economic Development Association. He also serves on the U.S. EPA's National Environmental Justice Advisory Council and he was recently appointed by former President Obama to serve on the President's Advisory Council on financial capability for young Americans. He's a founding member and former Chair of the National Coalition for Asian Pacific American Community Development.

Moved by Mitchell; seconded by Benoit, unanimously approved.

Ayes: Benoit, Mitchell, Dr. Parker, Dr. Burke
Noes: None
Absent: None

12. **Local Government & Small Business Assistance Advisory Group Minutes for the December 9, 2016 Meeting:** Mr. Alatorre advised that this is a written report (No motion required).

13. **Review March 3, 2017 Governing Board Agenda:** Mr. Nastri reported that the Board deliberation for the adoption of the 2016 AQMP will be considered in March. There will also be three other key items: Rule 1430 adoption, RECLAIM annual report, and the Technology Advancement Office Annual Report and Plan Update.

14. **Other Business:** None to report.

15. **Public Comment:** None.

Meeting adjourned at 10:32 a.m.

Attachment

Local Government & Small Business Assistance Advisory Group Minutes for the December 9, 2016 Meeting

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

LOCAL GOVERNMENT & SMALL BUSINESS ASSISTANCE ADVISORY GROUP FRIDAY, DECEMBER 9, 2016 MEETING MINUTES

MEMBERS PRESENT:
Ben Benoit, Council Member, City of Wildomar and LGSBA Chairman
Felipe Aguirre
Paul Avila, P.B.A. & Associates
Geoffrey Blake, Metal Finishers of Southern California/All Metals
LaVaughn Daniel, DancoEN
John DeWitt, JE DeWitt, Inc.
Maria Elena Kennedy, Kennedy Communications
Bill LaMarr, California Small Business Alliance
Rita Loof, RadTech International
Cynthia Moran, Council Member, City of Chino Hills
David Rothbart, Los Angeles County Sanitation District

MEMBERS ABSENT:
Todd Campbell, Clean Fuels

OTHERS PRESENT:
Dennis Yates

SCAQMD STAFF:
Derrick J. Alatorre, DEO/Public Advisor
Nancy Feldman, Principal Deputy District Counsel
Elaine-Joy Hills, AQ Inspector II
Lori Langrell, Secretary
Paul Wright, Audio Visual Specialist

Agenda Item #1 - Call to Order/Opening Remarks
Council Member Ben Benoit called the meeting to order at 12:19 p.m.

Agenda Item #2 – Approval of November 18, 2016 Meeting Minutes
Chair Benoit called for approval of the November 18, 2016 meeting minutes. The minutes were approved unanimously.

Agenda Item #3 – Review of Follow Up/Action Items
Mr. Derrick Alatorre advised the group with regard to a presentation on BACT guidelines that was requested, he has reached out to the BACT group, and hope to agendize a presentation in the first quarter of 2017. The second item was a question raised pertaining to the World Bank lending practices and emission reduction targets. Mr. Alatorre advised the group that there is not a lot of information

specifically on that topic, but the advisory group members will be emailed a link related to World Bank, with an interactive search tool called CIRB (Climate Action for Urban Sustainability).

Agenda Item #4 – Local Government & Small Business Assistance Advisory Group 2016 Accomplishments/2017 Goals & Objectives

Mr. Alatorre presented the 2016 Accomplishments, and 2017 Goals & Objectives to the advisory group.

Mr. John DeWitt asked when the permit backlog will be caught up. Mr. Alatorre indicated there is no way to pinpoint an exact date at this time. Chair Benoit indicated that two options were presented to the Administrative Committee: (1) a two year plan, and (2) a one year plan. Both plans brought a lot of expense in training and staffing, but the most important factor being considered is making technical additions, new computer software, submitting electronically, changing the process, etc.

Mr. Paul Avila asked if there is a way to get an update on permit status every four to six months. Chair Benoit indicated that they are looking at a widget for the website that would give a live number daily pertaining to permits.

Mr. David Rothbart asked if an applicant pays for an expedited permit, and the backlog work is being done on weekends, how does that expedite the process. Mr. Alatorre indicated he will leave that response to Dr. Tisopulos, but we have refunded expedited fees in the past if we were not able to do it.

Mr. Alatorre went over the 2017 Goals & Objectives, and asked for any additions, and also indicated that if there are any additions before the next meeting, they can be emailed in.

Ms. Nancy Feldman reminded the group that some members have expired ethics training, and to please complete the course as soon as possible. The course is available online.

Agenda Item #5 - Monthly Report on Small Business Assistance Activities

No comments.

Agenda Item #6 - Other Business

Ms. Loof commended Mr. Alatorre for his thorough and consistent follow up on the action items. Mr. Alatorre indicated it is a team effort and thanked staff for keeping him on track.

Agenda Item #7 - Public Comment

No comments.

Adjournment

The meeting adjourned at 12:39 p.m.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 26

REPORT: Investment Oversight Committee

SYNOPSIS: The Investment Oversight Committee met Friday, February 17, 2017 and discussed various issues detailed in the Committee report. The next Investment Oversight Committee meeting is scheduled for Friday, May 19, 2017 at 12:00 noon in Conference Room CC2.

RECOMMENDED ACTION:
Receive and file this report.

Dr. Joseph Lyou, Acting Chair
Investment Oversight Committee

MBO:lg

Attendance: Present at SCAQMD headquarters were Committee Members Dr. Joseph K. Lyou, Richard Dixon, and Brent Mason. Committee Member Shawn Nelson attended by teleconference. Absent were Committee Chair Michael Cacciotti, Committee Vice Chair Dr. William Burke, and Committee Member Gary Burton. Dr. Lyou chaired the meeting.

Investment Committee Action Items:

Quarterly Report of Investments: The Committee reviewed the quarterly investment report that was provided to the Board. For the month of December 2016, the SCAQMD's weighted average yield on total investments of $593,885,396 from all sources was 1.01%. The allocation by investment type was 89.17% in the Los Angeles County Pooled Surplus Investment Fund (PSI) and 10.83% in the State of California Local Agency Investment Fund (LAIF) and Special Purpose Investments (SPI). The one-year Treasury Bill rate as of December 30, 2016 was .85%.

Moved by Dixon; seconded by Mason; unanimously approved.
Ayes: Dixon, Mason, Nelson, Lyou
Noes: None
Absent: Burke, Burton, Cacciotti

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 2017 and SCAQMD's renewal of its delegation of authority to its treasurer. The Annual Investment Policy is being updated for two reasons: 1) to reflect the change in title of the Chief Financial Officer to the Chief Administrative Officer, and 2) to reflect clarifying language changes in the California Government Code related to the description of required credit quality of investments.

Moved by Dixon; seconded by Mason; unanimously approved.
Ayes: Dixon, Mason, Nelson, Lyou
Noes: None
Absent: Burke, Burton, Cacciotti

Investment Committee Discussion Item:

Financial Market Update: Henry Sun from PFM Asset Management provided the Committee with information on current investment markets, economic conditions, and the overall outlook. He presented market information on the recent increased Treasury yields along with higher commercial paper and negotiable CD yield spreads as compared to Treasuries. Economic indicators were also presented showing fourth quarter growth of 1.9%, growth in the labor market, national unemployment rate of 4.7%, slowly increasing inflation of 1.7%, and expectations for gradual increases in the Federal Funds Target Rate.

Other Business: None

Public Comment: None

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 27

REPORT: Legislative Committee

SYNOPSIS: The Legislative Committee held a meeting on Friday, February 10, 2017. The next Legislative Committee meeting is scheduled for Friday, March 10, 2017, at 9 a.m.

Agenda Item	Staff Recommendation
AB 1 (Frazier) Transportation Funding	Work with Author
SB 1 (Beall) Transportation Funding	Work with Author
AB 193 (Cervantes) Air Quality Improvement Program: Clean Reused Vehicle Rebate Project	Support and Work with Author
SB 53 (Hueso) Natural Gas Vehicles	Support
Proposed Legislation to Grant Cease and Desist Authority to Air Pollution Control Officer	Work on Concept and Introduce Bill

RECOMMENDED ACTION:
Receive and file this report, and approve agenda items as specified in this letter.

Judith Mitchell
Chair
Legislative Committee

DJA:PFC:mjk

Attendance *[Attachment 1]*

The Legislative Committee met on February 10, 2017. Committee Chair Judith Mitchell was present at the South Coast Air Quality Management District's (SCAQMD) Diamond Bar headquarters. Committee Members Joe Buscaino, Shawn Nelson, and Dr. Clark E. Parker, Sr. attended via videoconference. Mayor Pro Tem Ben Benoit was appointed to the committee for this meeting and was present at SCAQMD's Diamond Bar headquarters. Dr. William A. Burke was also appointed to the committee for this meeting and participated via videoconference.

Update on Federal Legislative Issues *[Attachment 2]*
SCAQMD's federal legislative consultants (Carmen Group, Cassidy & Associates, and Kadesh & Associates) each provided a written report on various key Washington, D.C. issues. The three firms each gave a verbal update as well.

Mr. Gary Hoitsma of the Carmen Group gave an update on his firm's written report by stating that Attorney General Jeff Sessions, Secretary of Health and Human Services Tom Price, and Secretary of Education Betsey DeVos had been officially appointed to President Donald Trump's cabinet. In addition, Mr. Hoitsma stated that three cabinet nominees for the positions of Treasury Secretary, Secretary of Veterans Affairs, and Small Business Administrator were to be voted on in the following week.

Mr. Hoitsma reported that the goal of the administration was to confirm nine cabinet members by February 17, the beginning of the President's Day recess. President Trump also announced that he would drop the position of Chairman of the Council of Economic Advisers from the cabinet-level list. Additionally, Scott Pruitt's nomination to the U.S. EPA is to be voted on in the upcoming weeks. Mr. Hoitsma also mentioned President Trump's "two-for-one" executive order, aimed at dramatically rolling back federal regulation was subject to lawsuits filed by various groups including the National Resources Defense Council. The order would require federal agencies to revoke two regulations for every new rule they propose to issue.

There was a discussion about Dr. Parker's recent visit to Washington, D.C. and meetings he held with several senators. In response to an inquiry from Dr. Burke, Councilmember Mitchell, Executive Officer Wayne Nastri, and Mr. Hoitsma confirmed that the Carmen Group had set up a prior meeting between Dr. Parker and Senator Jim Inhofe. Dr. Burke inquired when Dr. Parker would next be able to meet with Senator Inhofe, to which Mr. Hoitsma responded that Dr. Parker was welcome anytime. Dr. Burke responded that he wanted Dr. Parker to return to Washington D.C. within the next few weeks to meet with Senator Inhofe.

Ms. Amelia Jenkins of Cassidy & Associates stated that they were pleased to host Dr. Parker during his trip to Washington D.C. and that during his trip he was able to meet Senators Ben Cardin and Kamala Harris. Ms. Jenkins then updated the Committee on the status of regulatory reforms and the repeal of regulations through the Congressional Review Act, including the stream buffer zone rule, which had passed through the House of Representatives and the U.S. Senate, but had not yet been signed by President Trump. In addition, the methane emission rule, which deals with emissions of methane from drilling on public lands, is likely up for a vote in the U.S. Senate next week. The Fuel Economy Standards Midterm Review will probably be rolled back through a funding limitation on an appropriations bill. In addition, the Cross-State Air Pollution Rule for Ozone is subject to a ruling next month.

Mr. Mark Kadesh of Kadesh & Associates updated his firm's written report by giving an update on the appropriations process. He noted that President Trump's budget process was taking longer than is typical, and that the budget for fiscal year 2018 was expected sometime in early June. The fiscal year 2018 appropriations bills would likely have a late congressional appropriations process and be very condensed, since the federal fiscal year starts on October 1.

The fiscal year 2017 appropriations bills are operating under a continuing resolution (CR) which expires at the end of April. Mr. Kadesh noted that, in theory, the bills could be addressed then, or through an omnibus bill, but stated that it is anticipated that the continuing resolution would be continued beyond April and most likely through the rest of the fiscal year, although no decisions had been made. Currently, there are no changes in the fiscal year 2017 laws on appropriations levels and they will continue to use fiscal year 2016 levels.

Councilmember Mitchell inquired whether the CR would continue through the year, to which Mr. Kadesh responded that that was the expectation, because the appropriations committee is not working to pass the appropriations bills currently. A full-year CR is to be expected. Councilmember Mitchell then inquired whether the CR would continue beyond the expected budget date of June, to which Mr. Kadesh responded that President Trump will send in his fiscal year 2018 budget in June, but it would not start until October 1. Therefore, Congress would start working later than normal, and would have to pass twelve appropriations bills between June and October, which did not happen last year. Mr. Kadesh noted that the hope was that Congress would start moving bills in the summer.

Update on State Legislative Issues *[Attachment 3]*
SCAQMD's state legislative consultants (Joe A. Gonsalves & Son and Gonzalez, Quintana, Hunter & Cruz, LLC) also provided written reports on various key issues in Sacramento. The two firms each gave a verbal update as well.

Mr. Paul Gonsalves of Joe A. Gonsalves & Son updated his firm's report by stating that Friday, February 17 is the last day for all bills to be introduced, and that 600 to 700 bills had already been introduced. He anticipated that 1,000 more bills would be introduced and that he and the firm would communicate with the District on bills of interest.

Mr. Will Gonzalez of Gonzalez, Quintana, Hunter & Cruz, LLC, updated his firm's report by giving a summary of AB 378 by Assemblymember Cristina Garcia. AB 378 is of particular interest to SCAQMD as it is one of the latest cap-and-trade reauthorization bills, and has a heavy slant towards ensuring greenhouse gas emission and criteria pollutant reductions. Mr. Gonzalez noted that his firm is communicating with Assemblymember Garcia's office to ensure funding for the Air Quality Management Plan (AQMP) and is actively engaged in Sacramento on AQMP funding, including multiple existing cap-and-trade discussions and transportation bills.

Mr. Jacob Moss of Gonzalez, Quintana, Hunter & Cruz, LLC, gave an update on Aliso Canyon. Mr. Moss stated that over the next year, Aliso Canyon would be looked at by the California Public Utilities Commission (CPUC) and Senator Henry Stern. The CPUC would proceed in two phases on the potential of reducing or eliminating Aliso Canyon's use as a storage facility. The first phase would be a health study, and the second phase would be based on those results. Mr. Moss noted that the PUC is expecting to have a final decision by mid-2018, but that Senator Stern is hoping to accelerate that process through SB 57. SB 57 is a bill regarding Aliso Canyon, from which language was taken out of SB 143 to move the bill at a faster pace. Mr. Moss stated that SB 57 had moved out of the Senate Natural Resources Committee with a 7-2 vote and that part of the language in the bill directed PUC to have their decision and proceeding completed by December 21, 2017. In addition, SB 57 is an urgency bill which also requires that a third-party analysis be completed before restarting injections at the Aliso Canyon facility.

In response to an inquiry from Dr. Burke, Mr. Moss clarified that currently, there is a moratorium in place on natural gas injections into the Aliso Canyon facility, and that SoCalGas had requested permission to begin injecting into the storage field again. Through SB 57, Senator Stern is looking to continue that moratorium until the CPUC concludes their proceedings and until a third-party analysis is complete. Dr. Burke inquired about what would happen if SB 57 does not pass in the Legislature, to which Mr. Moss responded that while CPUC's proceedings would continue, they would likely consider SoCalGas's request to begin injections.

Councilmember Mitchell inquired about who had initially imposed the moratorium. Mr. Philip Crabbe, Community Relations Manager in SCAQMD's Legislative, Public Affairs and Media (LPAM) Office, and Mr. Moss responded that the moratorium had been imposed through a bill authored by Senator Fran Pavley last year. Councilmember Mitchell inquired about control of the moratorium, to which Mr. Moss responded that DOGGR and CPUC jointly had authority and the ability to decide whether injections could be restarted at the facility.

Councilmember Buscaino inquired about CPUC's projected timeline on the results of the study on Aliso Canyon. Mr. Moss responded that a final decision is to be expected by mid-2018.

Councilmember Mitchell inquired whether SB 57 seeks a permanent shutdown of Aliso Canyon facility. Mr. Crabbe explained that the moratorium is extended until a root cause analysis is completed, and cannot be lifted until a hearing determines whether permanent closure is feasible for the region.

Recommend Position on State Bill *[Attachment 4]*
AB 1 (Frazier) – Transportation Funding
SB 1 (Beall) – Transportation Funding
Mr. Philip Crabbe presented AB 1 and SB 1 to the Committee together since they are very similar. These are urgency bills that lay out a plan that proposes about $6 billion annually in new and redirected funding to address the urgent needs of the state's transportation system. The bills would increase the gas tax and vehicle registration fee, create a new $165 annual vehicle registration fee with an inflation adjustment for zero-emission motor vehicles, exclude the California Transportation Commission (CTC) from the California Transportation Agency (CalSTA) and create the Office of the Transportation Inspector General as an independent office in state government. This bill would also increase appropriations of moneys from the Greenhouse Gas Reduction Fund (GGRF) to 20% to the Transit and Intercity Rail Capital Program and to 10% to the Low Carbon Transit Operations Program annually.

In response to an inquiry from Dr. Parker, Mr. Crabbe stated that cap-and-trade reauthorization is only a small portion of the bill that is still in development. Through the bill, Governor Jerry Brown is looking to generate new revenue that is separate from cap-and-trade. Mr. Crabbe stated that the District is trying to get involved to obtain some of the funding for emission reductions, and that it is likely that other cap-and-trade reauthorization bills will be introduced.

Mr. Gonzalez stated that there are competing cap-and-trade bills, including one from Assemblymember Autumn Burke and one from Assemblymember Christina Garcia. He stated that the bill introduced by Assemblymember Garcia is more focused toward environmental justice, but that both the bills seek to change the program – Assemblymember Garcia's bill is more heavily focused on GHG emissions and criteria pollutant reductions in disadvantaged communities. A discussion on cap-and-trade ensued and how the legislation will affect funding the District is seeking to get for implementing the AQMP.

Supervisor Nelson raised concerns regarding the bills, stating that raising gasoline taxes and vehicle license fees can have a regressive effect on the ports and the communities. A discussion occurred on how the bill would affect ports and finding funding for infrastructure.

Councilmember Buscaino requested that staff continue to update the Committee on both AB 1 and SB 1.

Staff recommended a position of WORK WITH AUTHOR for both bills
Moved by Nelson; seconded by Buscaino; unanimously approved.
Ayes: Benoit, Burke, Nelson, Parker, Mitchell
Noes: None

Recommend Position on State Bill
AB 193 (Cervantes) – Air Quality Improvement Program: Clean Reused Vehicle Rebate Project
Mr. Crabbe presented AB 193 to the Committee. This bill would require the State Air Resources Board (CARB) to establish the Clean Reused Vehicle Rebate Project (CRVRP), as a part of the Air Quality Improvement Program (AQIP), to provide rebates or other incentives for the acquisition of an eligible used vehicle; the replacement or refurbishment of a battery and related components for an eligible used vehicle or an extended warranty for the battery or related components; or an extended service warranty to cover unexpected vehicle repairs not covered by the manufacturer's warranty related to unique problems in eligible used vehicles.

Supervisor Nelson brought up the issue of the consequences of zero-emission vehicles (ZEVs) not contributing to infrastructure costs since ZEV owners do not pay gas taxes. He wanted to make sure there was not an incentive to purchase ZEVs without also imposing a vehicle license fee on those vehicles. The direction of the committee was to support the bill, work with the author, and request amendments regarding a registration fee on ZEVs.

*Staff recommended a position of SUPPORT**. After committee discussion, a recommended position of SUPPORT AND WORK WITH AUTHOR was approved.***
Moved by Nelson; seconded by Parker; unanimously approved.
Ayes: Burke, Buscaino, Nelson, Parker, Mitchell
Noes: None

Recommend Position on State Bill
SB 53 (Hueso) – Natural Gas Vehicles
Mr. Marc Carrel, Program Supervisor in SCAQMD's Legislative, Public Affairs and Media (LPAM) Office, presented SB 53 to the Committee. This bill would amend Section 35551 of the Vehicle Code, relating to vehicles. This bill adopts a vehicle weight exemption for natural gas vehicles as specified in the Fixing America's Surface Transportation (FAST) Act of 2015. The act would allow natural gas vehicles to exceed federal weight limits by up to 2,000 pounds.

Staff recommended a position of SUPPORT
Moved by Nelson; seconded by Buscaino; unanimously approved.
Ayes: Burke, Buscaino, Nelson, Parker, Mitchell
Noes: None

Proposed Legislation for Approval *[Attachment 5]*
Ms. Barbara Baird, Chief Deputy Counsel, presented on an item to seek approval to introduce proposed legislation. This legislation would authorize the air pollution control officer, if he or she determines that a person has violated requirements regulating the emission of air pollutants and that the violation presents an imminent and substantial

endangerment to the public health or welfare, or the environment, to issue an order for abatement pending a hearing before the district Hearing Board. The bill would require the air pollution control officer to notify the alleged violator of the order and would establish a procedure for a post-order hearing.

In response to a prior inquiry by Supervisor Rutherford, Ms. Baird reported that the executive officers of DTSC and the State Water Resources Control Board have the ability to issue cease and desist orders.

A discussion ensued regarding the proposed legislation, its effect on businesses, and SCAQMD's Hearing Board process, and in particular, ensuring due process for businesses. Mr. Nastri stated that staff will continue to work on language to make sure the bill addresses the due process concerns. The committee members requested that staff continue to work on bill language to assure due process concerns are addressed and introduce the bill.

Staff recommended approval for the introduction of the bill proposal. ***After committee discussion, a recommended position of WORK ON CONCEPT AND INTRODUCE BILL was approved.***
Ayes: Burke, Buscaino, Nelson, Parker, Mitchell; unanimously approved.
Abstain: Benoit
Noes: None

Other Business:
None

Public Comment Period:
None

The committee adjourned until Friday, March 10, 2017.

Attachments
1. Attendance Record
2. Update on Federal Legislative Issues –Written Reports
3. Update on State Legislative Issues – Written Reports
4. Recommended Position on State Bills
5. Informational Item on Proposed Legislation

ATTACHMENT 1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
LEGISLATIVE COMMITTEE MEETING
Attendance – February 10, 2017

Councilmember Judith Mitchell	SCAQMD Board Member
Mayor ProTem Ben Benoit	SCAQMD Board Member
Dr. William A. Burke (Videoconference)	SCAQMD Board Member
Councilmember Joe Buscaino (Videoconference)	SCAQMD Board Member
Supervisor Shawn Nelson (Videoconference)	SCAQMD Board Member
Dr. Clark E. Parker, Sr. (Videoconference)	SCAQMD Board Member
Mark Abramowitz	Board Consultant (Lyou)
Mark Taylor	Board Consultant (Rutherford)
Gary Hoitsma (teleconference)	The Carmen Group
Amelia Jenkins (teleconference)	Cassidy & Associates
Mark Kadesh (teleconference)	Kadesh & Associates
Paul Gonsalves (teleconference)	Joe A. Gonsalves & Son
Will Gonzalez (teleconference)	Gonzalez, Quintana, Hunter & Cruz
Bill LaMarr	California Small Business Alliance
David Libatique	Port of Los Angeles
Rita Loof	RadTech
Eddie Marquez	Alon Energy
Eric Martell	Port of LA
David Rothbart	Los Angeles County Sanitation Districts
Derrick Alatorre	SCAQMD Staff
Leeor Alpern	SCAQMD Staff
Debra Ashby	SCAQMD Staff
Barbara Baird	SCQAMD Staff
Marc Carrel	SCAQMD Staff
Patrick Chandler	SCAQMD Staff
Philip Crabbe	SCAQMD Staff
Philip Fine	SCAQMD Staff
Bayron Gilchrist	SCAQMD Staff
Monika Kim	SCAQMD Staff
Matt Miyasato	SCAQMD Staff
Wayne Nastri	SCAQMD Staff
Robert Paud	SCAQMD Staff
Jeanette Short	SCAQMD Staff
Laki Tisopulos	SCAQMD Staff
Kim White	SCAQMD Staff
Todd Warden	SCAQMD Staff
Fabian Wesson	SCAQMD Staff
William Wong	SCAQMD Staff

ATTACHMENT 2

Carmen Group
INCORPORATED

MEMORANDUM

To: South Coast AQMD Legislative Committee

From: Carmen Group

Date: February 2017

Re: Federal Update -- Executive Branch

Status of Trump Cabinet Appointments

(As of February 1)

		***Confirmation Vote* (Y-N)**
Vice President	**Mike Pence…….**	**N/A**
Secretary of State	**Rex Tillerson ……..**	**56-43**
Treasury Secretary	Steven Mnuchin	
Defense Secretary	**James Mattis…….....**	**98-1**
Attorney General	Sen. Jeff Sessions	
Interior Secretary	Rep. Ryan Zinke	
Agriculture Secretary	Sonny Perdue	
Commerce Secretary	Wilbur Ross	
Labor Secretary	Andrew Puzder	
HHS Secretary	Rep. Tom Price	
HUD Secretary	Ben Carson	
Transportation Secretary	**Elaine Chao…… …….**	**93-6**
Energy Secretary	Rick Perry	
Education Secretary	Betsy DeVos	
Veterans Affairs Secretary	David Shulkin	
Homeland Security Sec.	**John Kelly…….....**	**88-11**
White House Chief of Staff	**Reince Priebus……**	**N/A**
OMB Director	Rep. Mick Mulvaney	
EPA Administrator	Scott Pruitt	
US Trade Representative	Robert Lighthizer	
UN Ambassador	**Nikki Haley……..**	**96-4**
SBA Administrator	Linda McMahon	
Economic Advisors Chair	--	
Environmental Quality Chair	--	

Trump Administration

Issue Paper on An America First Energy Plan

Upon taking office on January 20, the Trump Administration posted an issue paper entitled "An America First Energy Plan." Selected excerpts: *"President Trump is committed to eliminating harmful and unnecessary policies such as the Climate Action Plan and the Waters of the U.S. rule…..Our need for energy must go hand-in-hand with responsible stewardship of the environment. Protecting clean air and clean water, conserving our natural habitats, and preserving our natural reserves and resources will remain a high priority. President Trump will refocus the EPA on its essential mission of protecting our air and water."*

Executive Order on Reducing Regulation and Controlling Regulatory Costs

Directs the heads of all agencies to provide that for every one new regulation issued, at least two prior regulations must be identified for elimination. Any new incremental costs associated with new regulations shall, to the extent permitted by law, be offset by the elimination of existing costs associated with at least two prior regulations. In addition, the order provides that the costs of planned regulations be prudently managed and controlled through a budgeting process that will be implemented by the Office of Management and Budget and include guidance "standardizing the measurement and estimation of regulatory costs."

Executive Order Expediting Environmental Reviews and Approvals for High Priority Infrastructure Projects

Establishes a framework for expediting environmental reviews for high priority infrastructure projects including highways, bridges, tunnels, the electrical grid, ports, water systems, airports, railways and pipelines. Directs the Chairman of the White House Council on Environmental Quality (CEQ) to decide within 30 days of a request from a Governor or head of executive department or agency, or on his or her own initiative, whether an infrastructure project qualifies as "high priority," considering the project's importance to the general welfare, value to the Nation, environmental benefits, and other such factors as the Chairman deems relevant. For projects so designated as "high priority," the Chairman of the CEQ shall coordinate with the head of the relevant agency to establish expedited procedures and deadlines for completion of environmental reviews and approvals for such projects.

Presidential Memorandum Streamlining Permitting and Reducing Regulatory Burdens for Domestic Manufacturing

Directs the Secretary of Commerce to conduct a 60-day outreach to stakeholders and solicit comments from the public concerning Federal actions to streamline permitting and reduce regulatory burdens affecting domestic manufacturers. As part of this process, there shall be coordination with the Secretaries of Agriculture and Energy, the Administrator of the Environmental Protection Agency, the Director of the Office of Management and Budget, the Administrator of the Small Business Administration, and such other agency heads as may be appropriate. The Commerce Secretary will then submit a report to the President with recommendations identifying priority actions and recommended deadlines for completing actions. It also may include recommendations for any necessary changes in existing regulations or statues, as well as policies, practices or procedures that can be taken immediately under existing authority.

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CASSIDY&ASSOCIATES
733 Tenth Street, N.W., Suite 400
Washington, DC 20001-4886
(202) 347-0773
www.cassidy.com

To: South Coast Air Quality Management District

From: Cassidy & Associates

Date: February 1, 2017

Re: February Federal Update – House of Representatives

In the past month, the new Congress and Trump Administration began. Below is a summary of issues relevant to South Coast Air Quality Management District (SCAQMD).

The Beginning of Regulatory Reform

Stream Buffer Zone Rule: On February 1, 2017, the House will consider a joint resolution of disapproval of the Office of Surface Mining's (OSM) Stream Protection Rule (SPR), which focuses on environmental protection surrounding coal mining areas. This will be the first "midnight" rule to be considered under the Congressional Review Act by the full House. The resolution is very likely to pass the House and move to the Senate where passage is also likely. Once enacted, this resolution of disapproval would ensure that the final SPR has no force or effect and that the OSM cannot issue a rule that is substantially the same without subsequent authorization from Congress.

Methane Emissions Rule: A second Congressional Review Act item of interest to SCAQMD is the Resolution of Disapproval of the Bureau of Land Management's (BLM) final rule on methane emissions from oil and gas operations on federal and Indian Land. Many Republicans feel that this rule is unnecessary as the Environmental Protection Agency and individual states currently regulate methane emissions, so this rule would be duplicative in their opinion. The disapproval resolution is likely to come up in the House in the coming weeks followed quickly by the Senate. While it may seem that these are moving quickly on the House side, the Senate rules require at least 10 hours of floor debate on each resolution, meaning that there is not a lot of available time for each of these to be considered, so they will move much more slowly on the Senate side. Senate Majority Leader McConnell and Senate Majority Whip Cornyn are both cosponsors of the Senate resolution.

Fuel Economy Standards/Mid-Term Review. One of the final regulatory actions implemented by the Obama Administration was its decision to affirm the 2022-2025 fuel economy standards for cars and light trucks. This sets up automakers to achieve a greenhouse gas compliance figure of 51.4 mpg, with an average fuel economy rating of 36 mpg. Given that the 2016 real world fleet average fuel economy is about 26 mpg, this means that the fleet must improve by about 10 mpg over the 9-year period from 2016 to 2025, or about one mpg per year. For background, the mid-term review was established as a part of the 2012 final greenhouse gas emissions standards for model years 2017-2025. While not currently on the

legislative calendar, we anticipate repeal of this review will be part of a broader effort at regulatory reform.

Ozone Standards Implementation Act of 2017: On February 1, 2017, both the House and Senate reintroduced legislation to delay the effective date of the 70 ppb ozone standard to 2025. The Senate version of the Ozone Standards Implementation Act of 2017 (S. 263) is led by Shelley Moore Capito (R-WV) and has five original cosponsors, including one Democrat (Joe Manchin). The House version HR 806 is led by Pete Olsen (R-TX) and has 19 original cosponsors, including three Democrats. Under the current ozone standard, final attainment designations are scheduled for October of this year. The bill would also prevent U.S. EPA from reconsidering the current standard before 2025, and would stretch the "reconsideration timeline" in the Clean Air Act from every 5 years to every 10 years. Similar legislation was offered last Congress, but at that time it faced a certain veto threat from President Obama. The House is expected to pass it and will likely move quickly to do so, given the October compliance timeline. The question is whether seven other Democrats in the Senate would also vote to do so.

Infrastructure Proposals

President Trump Infrastructure Package: President Donald Trump's Infrastructure Plan, while considered conceptual at this time, proposes to spend $1 trillion over 10 years using tax cuts, credits, and the possibility of repatriation of taxes on overseas profits from U.S. companies. Without specific details, it's difficult to ascertain what policies or projects President Trump would propose to Congress that hasn't already been covered in the FAST Act and past two WRDA bills. All three of those bills have made significant progress to address our nation's infrastructure in terms of policy and project delivery since 2014.

Aside from an "unofficial" Top 50 Project List being circulated around the infrastructure stakeholders, there haven't been any actions to date other than general tax reform concepts and possible policy proposals. Should the President propose an infrastructure plan to Congress, the requisite committee of jurisdiction in the Senate will comprise the committees on Environment and Public Works, Banking, Energy, and Finance, and Commerce. In the House, those committees would be Transportation and Infrastructure, Ways and Means, Energy and Commerce, and Natural Resources.

Senate Democratic Infrastructure Package: The $1 Trillion Democratic proposal introduced last week — backed by Democratic Sens. Schumer, Tom Carper, Sherrod Brown, Bernie Sanders, Bill Nelson, Maria Cantwell, and Ron Wyden — steers away from new road construction and focuses more on repairing existing roads. It also has billions for transit, ports, the electric grid, and other projects.

Here's a breakdown of interest to SCAQMD:

- $210 billion to "repair crumbling roads and bridges." This would include an expansion of the Obama administration's TIGER grants program.
- $70 billion to "modernize America's Ports, Airports, & Waterways."
- $100 billion in new funding for energy infrastructure and grid modernization. This would also include reforming tax incentives for renewable energy. In addition, a "permanent incentive would be given for electricity generation, transportation fuels, and energy efficiency improvements."

- It proposes the creation of a new infrastructure finance entity ("I-Bank") that would unlock private pools of capital to provide low-cost loans or loan guarantees for infrastructure projects across a broad range of sectors, including transportation, energy, affordable housing, and water infrastructure.

VW Settlement

On February 1, 2017, VW and the Department of Justice resolved one of the few outstanding questions in the defeat device scandal – how the buyback process for 3-liter vehicles (representing about 18% of the offending vehicles) would work. At this time, the settlement opportunity for California is:

a. $381.3 + $41 million = $422.3 million total for California to spend on "DERA Style" projects, to be administered by CARB and a special state trustee, to be named by Governor Brown. VW will not send these funds to California all at once; they will trickle in over a three-year period.
b. $800 million for deployment of ZEV vehicles and their infrastructure, to be administered by VW over the next 10 years. If SCAQMD or partners want to recommend specific proposals or high-level considerations for this pot of money, visit www.electrifyamerica.com. On February 22, VW will share its plans for the initial ZEV Investment with EPA and CARB.
c. $25 million to support the existing EFMP Plus Up program, to be administered by CARB.

In addition, VW must establish two "Green Cities" in California, where funds are concentrated specifically for activities like electrifying Uber/Lyft fleets or freight. These cities have yet to be chosen. Candidate cities must have 500,000 people or more. At least one will be in a low-income area. Presumably the funding for the Green Cities will be taken out of the $800 million pot above.

Just a day prior, Democrats on the House Energy and Commerce Committee requested information of VW regarding the delay in the buyback program required under the settlement.

KADESH & ASSOCIATES, LLC

MEMORANDUM

To: South Coast AQMD Legislative Committee
From: Kadesh & Associates
Date: February 2, 2017
Re: Federal Legislative Update - Senate

Senate Confirmations

The Senate continues to work its way through nominations. So far, Secretaries Chao (Transportation), Tillerson (State), Mattis (Defense), and Kelly (Homeland Security) have been confirmed. The balance of the nominees, including Pruitt (EPA), Perry (Energy), and Zinke (Interior) are awaiting Senate action.

Appropriations

House Appropriations Subcommittee Chairmen held a meeting this week to discuss resolution of the FY17 appropriations bills, but it is our understanding that the discussion centered around the White House's recent executive orders and not how best to move the FY17 bills. At this point, there does not appear to be a plan on how to move forward on the FY17 appropriations bills, which are currently funded under a continuing resolution (CR) until April 28th. Several Democratic appropriators in both the House and Senate have expressed their desire to use the appropriations bills as vehicles to try and counter recent presidential executive orders. These actions could delay or halt the appropriations cycle, especially once bills make their way to Senate. It is clear that leadership has not yet focused on completing the FY17 appropriations bills.

Appropriations Committee staff are preparing individual bills for inclusion in an omnibus package and anomalies lists in case the CR is extended. In some cases (i.e. Department of Defense) it might be easier to pass the regular bill than run a CR. The likely endgame will be another CR-Omnibus, but we are pretty far from that actually happening. Additionally, staff has been told to prepare for an across-the-board cut of indeterminate size. But, again, this is speculation because leadership has not been focused on this matter.

Budget Requests

Also this week, the White House instructed departments and agencies to submit their FY17 supplemental items to the Office of Management and Budget (OMB) by March 1st and their FY18 budget requests by May 1st. The supplemental will likely be driven by war funding needs and natural disaster needs. Factoring in the approximate 3-4 weeks OMB would need to vet these requests, we do not expect to see the supplemental until the end of March and the FY18 budget request until the end of May.

ATTACHMENT 3

Joe A. Gonsalves & Son
Anthony D. Gonsalves
Jason A. Gonsalves
Paul A. Gonsalves
PROFESSIONAL LEGISLATIVE REPRESENTATION
925 L ST. · SUITE 250 · SACRAMENTO, CA 95814-3766
916 441-0597 · FAX 916 441-5061
Email: gonsalves@gonsalvi.com

TO: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

FROM: ANTHONY, JASON, AND PAUL GONSALVES

SUBJECT: FEBRUARY LEGISLATIVE UPDATE

DATE: FRIDAY, FEBRUARY 3, 2017

The 2017-18 Legislative session resumed on January 4, 2017. The Legislature quickly reacted to the actions taking place at the Federal level by adopting resolutions and hiring former US Attorney General, Eric Holder Jr., to protect California from Federal policies. Additionally, Governor Brown laid out his January Budget proposal that outlined a $2 billion budget shortfall if no action is taken. During the State of the State, Governor Brown focused more on the broader context our country and the challenges we face. In one of the most passionate State of the State Addresses, Governor Brown promised to defend everyone in our state, continue to lead the world in addressing climate change, and even agreed with President Trump on the need for investment in our infrastructure. The challenges facing California are unclear at this point, however, the Governor and Legislature have made it clear that they are ready to stand up to protect California and its current policies.

ASSEMBLY COMMITTEE CHAIR ASSIGNMENTS:

On December 27, 2016, Assembly Speaker Rendon announced his Leadership team along with the Chairs of the Assembly Committee's. At that time, the make-up of those Committees were not assigned. On January 20, 2017, Assembly Speaker Rendon announced the make-up of each Committee. The following will provide you with the Member's assigned to each Committee:

Accountability and Administrative Review

Assemblymember Susan Eggman, Chair
Assemblymember Tom Lackey, Vice Chair
Assemblymember Autumn Burke

Assemblymember Heath Flora
Assemblymember Jim Frazier
Assemblymember Jose Medina
Assemblymember Sharon Quirk-Silva

Aging and Long-Term Care
Assemblymember Ash Kalra, Chair
Assemblymember Randy Voepel, Vice Chair
Assemblymember Dante Acosta
Assemblymember Anna Caballero
Assemblymember Mike Gipson
Assemblymember Todd Gloria
Assemblymember Adam Gray

Agriculture
Assemblymember Anna Caballero, Chair
Assemblymember Devon Mathis, Vice Chair
Assemblymember Cecilia Aguiar-Curry
Assemblymember Heath Flora
Assemblymember James Gallagher
Assemblymember Adam Gray
Assemblymember Jacqui Irwin
Assemblymember Reginald Jones-Sawyer, Sr.
Assemblymember Bill Quirk
Assemblymember Rudy Salas, Jr.

Appropriations
Assemblymember Lorena Gonzalez Fletcher, Chair
Assemblymember Frank Bigelow, Vice Chair
Assemblymember Richard Bloom
Assemblymember Raul Bocanegra
Assemblymember Rob Bonta
Assemblymember Bill Brough
Assemblymember Ian Calderon
Assemblymember Ed Chau
Assemblymember Susan Eggman
Assemblymember Vince Fong
Assemblymember Laura Friedman
Assemblymember James Gallagher
Assemblymember Eduardo Garcia
Assemblymember Adam Gray
Assemblymember Al Muratsuchi
Assemblymember Jay Obernolte
Assemblymember Eloise Reyes

Arts, Entertainment, Sports, Tourism, and Internet Media
Assemblymember Kansen Chu, Chair
Assemblymember Marie Waldron, Vice Chair
Assemblymember Dante Acosta
Assemblymember David Chiu
Assemblymember Laura Friedman
Assemblymember Jose Medina
Assemblymember Adrin Nazarian

Banking and Finance
Assemblymember Matthew Dababneh, Chair
Assemblymember Phillip Chen, Vice Chair
Assemblymember Autumn Burke
Assemblymember Sabrina Cervantes
Assemblymember Timothy Grayson
Assemblymember Monique Limón
Assemblymember Melissa Melendez
Assemblymember Sebastian Ridley-Thomas
Assemblymember Marc Steinorth
Assemblymember Mark Stone
Assemblymember Shirley Weber

Budget
Assemblymember Phil Ting, Chair
Assemblymember Jay Obernolte, Vice Chair
Assemblymember Travis Allen
Assemblymember Joaquin Arambula
Assemblymember Richard Bloom
Assemblymember Anna Caballero
Assemblymember Rocky Chávez
Assemblymember David Chiu
Assemblymember Steven Choi
Assemblymember Jim Cooper
Assemblymember Vince Fong
Assemblymember Cristina Garcia
Assemblymember Matthew Harper
Assemblymember Jacqui Irwin
Assemblymember Reginald Jones-Sawyer, Sr.
Assemblymember Tom Lackey
Assemblymember Monique Limón
Assemblymember Devon Mathis
Assemblymember Kevin McCarty
Assemblymember Jose Medina
Assemblymember Melissa Melendez
Assemblymember Kevin Mullin
Assemblymember Patrick O'Donnell

Assemblymember Jim Patterson
Assemblymember Blanca Rubio
Assemblymember Mark Stone
Assemblymember Randy Voepel
Assemblymember Shirley Weber
Assemblymember Jim Wood

Budget Subcommittee No. 1 on Health and Human Services
Assemblymember Joaquin Arambula, Chair
Assemblymember Matthew Harper
Assemblymember Devon Mathis
Assemblymember Blanca Rubio
Assemblymember Jim Wood
Assemblymember Phil Ting, Democratic Alternate
Assemblymember Jay Obernolte, Republican Alternate

Budget Subcommittee No. 2 on Education Finance
Assemblymember Kevin McCarty, Chair
Assemblymember Rocky Chávez
Assemblymember Jacqui Irwin
Assemblymember Monique Limón
Assemblymember Jose Medina
Assemblymember Patrick O'Donnell
Assemblymember Randy Voepel
Assemblymember Phil Ting, Democratic Alternate
Assemblymember Jay Obernolte, Republican Alternate

Budget Subcommittee No. 3 on Resources and Transportation
Assemblymember Richard Bloom, Chair
Assemblymember Vince Fong
Assemblymember Cristina Garcia
Assemblymember Kevin Mullin
Assemblymember Jim Patterson
Assemblymember Phil Ting, Democratic Alternate
Assemblymember Jay Obernolte, Republican Alternate

Budget Subcommittee No. 4 on State Administration
Assemblymember Jim Cooper, Chair
Assemblymember Travis Allen
Assemblymember Anna Caballero
Assemblymember David Chiu
Assemblymember Steven Choi
Assemblymember Phil Ting, Democratic Alternate
Assemblymember Jay Obernolte, Republican Alternate

Budget Subcommittee No. 5 on Public Safety
Assemblymember Shirley Weber, Chair
Assemblymember Reginald Jones-Sawyer, Sr.
Assemblymember Tom Lackey
Assemblymember Melissa Melendez
Assemblymember Mark Stone
Assemblymember Phil Ting, Democratic Alternate
Assemblymember Jay Obernolte, Republican Alternate

Budget Subcommittee No. 6 on Budget Process, Oversight and Program Evaluation
Assemblymember Phil Ting, Chair
Assemblymember Travis Allen
Assemblymember Joaquin Arambula
Assemblymember Richard Bloom
Assemblymember Jim Cooper
Assemblymember Kevin McCarty
Assemblymember Jay Obernolte
Assemblymember Jim Patterson
Assemblymember Shirley Weber

Business and Professions
Assemblymember Rudy Salas, Jr., Chair
Assemblymember Bill Brough, Vice Chair
Assemblymember Joaquin Arambula
Assemblymember Catharine Baker
Assemblymember Richard Bloom
Assemblymember David Chiu
Assemblymember Jordan Cunningham
Assemblymember Brian Dahle
Assemblymember Susan Eggman
Assemblymember Mike Gipson
Assemblymember Timothy Grayson
Assemblymember Chris Holden
Assemblymember Evan Low
Assemblymember Kevin Mullin
Assemblymember Marc Steinorth
Assemblymember Phil Ting

Communications and Conveyance
Assemblymember Miguel Santiago, Chair
Assemblymember Jay Obernolte, Vice Chair
Assemblymember Rob Bonta
Assemblymember Sabrina Cervantes
Assemblymember Matthew Dababneh
Assemblymember Eduardo Garcia

Assemblymember Chris Holden
Assemblymember Tom Lackey
Assemblymember Evan Low
Assemblymember Brian Maienschein
Assemblymember Jim Patterson
Assemblymember Freddie Rodriguez
Assemblymember Jim Wood

Education
Assemblymember Patrick O'Donnell, Chair
Assemblymember Rocky Chávez, Vice Chair
Assemblymember Todd Gloria
Assemblymember Kevin Kiley
Assemblymember Kevin McCarty
Assemblymember Tony Thurmond
Assemblymember Shirley Weber

Elections and Redistricting
Assemblymember Evan Low, Chair
Assemblymember Matthew Harper, Vice Chair
Assemblymember Marc Berman
Assemblymember Ian Calderon
Assemblymember Jordan Cunningham
Assemblymember Kevin Mullin
Assemblymember Shirley Weber

Environmental Safety and Toxic Materials
Assemblymember Bill Quirk, Chair
Assemblymember Brian Dahle, Vice Chair
Assemblymember Joaquin Arambula
Assemblymember Phillip Chen
Assemblymember Cristina Garcia
Assemblymember Jimmy Gomez
Assemblymember Chris Holden

Governmental Organization
Assemblymember Adam Gray, Chair
Assemblymember Frank Bigelow, Vice Chair
Assemblymember Dante Acosta
Assemblymember Cecilia Aguiar-Curry
Assemblymember Rob Bonta
Assemblymember Bill Brough
Assemblymember Ken Cooley
Assemblymember Jim Cooper
Assemblymember Tom Daly
Assemblymember James Gallagher

Assemblymember Eduardo Garcia
Assemblymember Mike Gipson
Assemblymember Todd Gloria
Assemblymember Reginald Jones-Sawyer, Sr.
Assemblymember Kevin Kiley
Assemblymember Marc Levine
Assemblymember Evan Low
Assemblymember Blanca Rubio
Assemblymember Rudy Salas, Jr.
Assemblymember Marie Waldron

Health
Assemblymember Jim Wood, Chair
Assemblymember Brian Maienschein, Vice Chair
Assemblymember Rob Bonta
Assemblymember Autumn Burke
Assemblymember James Gallagher
Assemblymember Monique Limón
Assemblymember Kevin McCarty
Assemblymember Adrin Nazarian
Assemblymember Jim Patterson
Assemblymember Sharon Quirk-Silva
Assemblymember Sebastian Ridley-Thomas
Assemblymember Freddie Rodriguez
Assemblymember Miguel Santiago
Assemblymember Tony Thurmond
Assemblymember Marie Waldron

Higher Education
Assemblymember Jose Medina, Chair
Assemblymember Catharine Baker, Vice Chair
Assemblymember Joaquin Arambula
Assemblymember Richard Bloom
Assemblymember Rocky Chávez
Assemblymember Steven Choi
Assemblymember Jacqui Irwin
Assemblymember Kevin Kiley
Assemblymember Marc Levine
Assemblymember Evan Low
Assemblymember Sharon Quirk-Silva
Assemblymember Miguel Santiago
Assemblymember Shirley Weber

Housing and Community Development
Assemblymember David Chiu, Chair
Assemblymember Marc Steinorth, Vice Chair

Assemblymember Raul Bocanegra
Assemblymember Ed Chau
Assemblymember Steven Choi
Assemblymember Ash Kalra
Assemblymember Monique Limón

Human Services
Assemblymember Blanca Rubio, Chair
Assemblymember Steven Choi, Vice Chair
Assemblymember Joaquin Arambula
Assemblymember Lorena Gonzalez Fletcher
Assemblymember Brian Maienschein
Assemblymember Mark Stone
Assemblymember Tony Thurmond

Insurance
Assemblymember Tom Daly, Chair
Assemblymember Melissa Melendez, Vice Chair
Assemblymember Frank Bigelow
Assemblymember Anna Caballero
Assemblymember Ian Calderon
Assemblymember Kansen Chu
Assemblymember Ken Cooley
Assemblymember Jim Cooper
Assemblymember Matthew Dababneh
Assemblymember Brian Dahle
Assemblymember Jim Frazier
Assemblymember Mike Gipson
Assemblymember Randy Voepel

Jobs, Economic Development, and the Economy
Assemblymember Sharon Quirk-Silva, Chair
Assemblymember Travis Allen, Vice Chair
Assemblymember Marc Berman
Assemblymember Sabrina Cervantes
Assemblymember Timothy Grayson
Assemblymember Freddie Rodriguez
Assemblymember Marc Steinorth

Judiciary
Assemblymember Mark Stone, Chair
Assemblymember Jordan Cunningham, Vice Chair
Assemblymember Ed Chau
Assemblymember Cristina Garcia
Assemblymember Chris Holden
Assemblymember Ash Kalra

Assemblymember Kevin Kiley
Assemblymember Brian Maienschein
Assemblymember Eloise Reyes
Assemblymember Phil Ting

Labor and Employment
Assemblymember Tony Thurmond, Chair
Assemblymember Heath Flora, Vice Chair
Assemblymember Jimmy Gomez
Assemblymember Matthew Harper
Assemblymember Ash Kalra
Assemblymember Kevin McCarty
Assemblymember Eloise Reyes

Local Government
Assemblymember Cecilia Aguiar-Curry, Chair
Assemblymember Marie Waldron, Vice Chair
Assemblymember Richard Bloom
Assemblymember Anna Caballero
Assemblymember Lorena Gonzalez Fletcher
Assemblymember Timothy Grayson
Assemblymember Tom Lackey
Assemblymember Sebastian Ridley-Thomas
Assemblymember Randy Voepel

Natural Resources
Assemblymember Cristina Garcia, Chair
Assemblymember Dante Acosta, Vice Chair
Assemblymember Travis Allen
Assemblymember Ed Chau
Assemblymember Susan Eggman
Assemblymember Heath Flora
Assemblymember Monique Limón
Assemblymember Kevin McCarty
Assemblymember Al Muratsuchi
Assemblymember Mark Stone

Privacy and Consumer Protection
Assemblymember Ed Chau, Chair
Assemblymember Kevin Kiley, Vice Chair
Assemblymember Catharine Baker
Assemblymember Marc Berman
Assemblymember Ian Calderon
Assemblymember Matthew Dababneh
Assemblymember Jacqui Irwin
Assemblymember Ash Kalra

Assemblymember Jay Obernolte
Assemblymember Eloise Reyes

Public Employees, Retirement, and Social Security
Assemblymember Freddie Rodriguez, Chair
Assemblymember Travis Allen, Vice Chair
Assemblymember Bill Brough
Assemblymember Sabrina Cervantes
Assemblymember Ken Cooley
Assemblymember Jim Cooper
Assemblymember Patrick O'Donnell

Public Safety
Assemblymember Reginald Jones-Sawyer, Sr., Chair
Assemblymember Tom Lackey, Vice Chair
Assemblymember Jordan Cunningham
Assemblymember Lorena Gonzalez Fletcher
Assemblymember Bill Quirk
Assemblymember Blanca Rubio
Assemblymember Miguel Santiago

Revenue and Taxation
Assemblymember Sebastian Ridley-Thomas, Chair
Assemblymember Bill Brough, Vice Chair
Assemblymember Travis Allen
Assemblymember Raul Bocanegra
Assemblymember Autumn Burke
Assemblymember Phillip Chen
Assemblymember Matthew Dababneh
Assemblymember Mike Gipson
Assemblymember Kevin Mullin
Assemblymember Bill Quirk

Rules
Assemblymember Ken Cooley, Chair
Assemblymember Jordan Cunningham, Vice Chair
Assemblymember Marc Berman
Assemblymember Bill Brough
Assemblymember Sabrina Cervantes
Assemblymember Phillip Chen
Assemblymember Laura Friedman
Assemblymember Timothy Grayson
Assemblymember Marc Levine
Assemblymember Adrin Nazarian
Assemblymember Marie Waldron

Assemblymember Jimmy Gomez, Democratic Alternate
Assemblymember Vince Fong, Republican Alternate

Transportation
Assemblymember Jim Frazier, Chair
Assemblymember Vince Fong, Vice Chair
Assemblymember Cecilia Aguiar-Curry
Assemblymember Catharine Baker
Assemblymember Marc Berman
Assemblymember Raul Bocanegra
Assemblymember Kansen Chu
Assemblymember Tom Daly
Assemblymember Laura Friedman
Assemblymember Matthew Harper
Assemblymember Devon Mathis
Assemblymember Jose Medina
Assemblymember Adrin Nazarian
Assemblymember Patrick O'Donnell

Utilities and Energy
Assemblymember Chris Holden, Chair
Assemblymember Jim Patterson, Vice Chair
Assemblymember Autumn Burke
Assemblymember Rocky Chávez
Assemblymember Phillip Chen
Assemblymember Brian Dahle
Assemblymember Susan Eggman
Assemblymember Vince Fong
Assemblymember Cristina Garcia
Assemblymember Eduardo Garcia
Assemblymember Al Muratsuchi
Assemblymember Bill Quirk
Assemblymember Eloise Reyes
Assemblymember Miguel Santiago
Assemblymember Phil Ting

Veterans Affairs
Assemblymember Jacqui Irwin, Chair
Assemblymember Rocky Chávez, Vice Chair
Assemblymember Tom Daly
Assemblymember Jim Frazier
Assemblymember Todd Gloria
Assemblymember Devon Mathis
Assemblymember Al Muratsuchi
Assemblymember Sharon Quirk-Silva

Assemblymember Rudy Salas, Jr.
Assemblymember Randy Voepel

Water, Parks, and Wildlife
Assemblymember Eduardo Garcia, Chair
Assemblymember James Gallagher, Vice Chair
Assemblymember Frank Bigelow
Assemblymember Steven Choi
Assemblymember Kansen Chu
Assemblymember Laura Friedman
Assemblymember Todd Gloria
Assemblymember Jimmy Gomez
Assemblymember Matthew Harper
Assemblymember Marc Levine
Assemblymember Devon Mathis
Assemblymember Blanca Rubio
Assemblymember Rudy Salas, Jr.
Assemblymember Tony Thurmond
Assemblymember Jim Wood

Joint Legislative Audit
Assemblymember Al Muratsuchi, Chair
Assemblymember Dante Acosta
Assemblymember Catharine Baker
Assemblymember Adrin Nazarian
Assemblymember Jay Obernolte
Assemblymember Blanca Rubio
Assemblymember Jim Wood

Joint Legislative Committee on Emergency Management
Assemblymember Freddie Rodriguez, Vice Chair
Assemblymember Cecilia Aguiar-Curry
Assemblymember Rocky Chávez
Assemblymember Jim Cooper
Assemblymember Heath Flora
Assemblymember Adam Gray
Assemblymember Tom Lackey

Legislative Ethics
Assemblymember Eloise Reyes, Co-Chair
Assemblymember Jim Patterson, Co-Chair
Assemblymember Marc Berman
Assemblymember Heath Flora
Assemblymember Cristina Garcia
Assemblymember Marie Waldron

LEGISLATIVE CALENDAR

As of today, the Legislature has introduced over 600 bills, many of which are spot bills, and we expect to see over 1000 more introduced by the February 17, 2017 deadline. On top of this, a vast majority of all the bills introduced will receive numerous amendments throughout the process. Our firm will continue to monitor all bills introduced and every amendment to identify bills of interest to the District.

The following will provide you with the upcoming Legislative deadlines for the 2017-18 legislative session:

February 17, 2017 – Last Day for Bills to be Introduced
April 6-17, 2017 – Spring Recess
April 28, 2017 – Last day for Policy Committees to Hear Fiscal Bills
May 12, 2017 – Last Day for Policy Committees to Hear Non-Fiscal Bills
May 19, 2017 – Last day for Policy Committees to Meet Prior to June 5, 2017
May 26, 2017 – Last Day for Fiscal Committees to Meet.
May 30-June 2, 2017 – Floor Session Only
June 2, 2017 – Last Day to Pass Bills out of Their House of Origin.
June 15, 2017 – Budget Bill Must be Adopted
July 14, 2017 – Last day for Policy Committees to Hear Fiscal Bills
July 21, 2017 – Last day for Policy Committees to Hear Bills.
July 21-August 21, 2017 – Summer Recess
September 1, 2017 – Last Day for Fiscal Committees to Hear Bills
September 5-15, 2017 – Floor Session Only
September 8, 2017 – Last Day to Amend on the Floor
September 15, 2017 – Last Day of Session

SB 146/SB 57 (Stern)

In the wake of the blowout of a natural gas storage well at So Cal Gas' Aliso Canyon natural gas storage facility, the Legislature passed and the Governor signed SB 380 (Pavley, chapter 14, Statutes of 2016) which instituted numerous requirements and conditions on operations at the facility. The leak, which started in late October 2015, released over five billion cubic feet of gas to the atmosphere over the almost four months needed to retake control of the well and resulted in the relocation of over 8,000 households and significant public health concerns in the community.

SB 380 codified into law actions already undertaken by the Division of Oil, Gas and Geothermal Resources (DOGGR) and the California Public Utilities Commission (CPUC) to address the leak, maintained the moratorium on injections of natural gas into the facility until specific criteria were met, placed operating conditions on the storage wells for the next 5 years, and required the CPUC to study and address energy reliability concerns and institute a proceeding by July 1, 2017 to address the feasibility of minimizing the use of or shutting down the facility.

In response to the blowout, DOGGR also instituted emergency regulations that provided more oversight of natural gas storage well operations and released a pre-rulemaking "discussion draft" of additional regulations applicable to all natural gas storage wells in the state. The CPUC has announced that a vote to start the required proceeding will take place on February 9, 2017.

Senator Stern introduced SB 146 to modify SB 380's requirements to prevent the DOGGR supervisor from certifying that it is safe to re-start injections at the Aliso Canyon facility until a third party "root cause analysis" jointly ordered by DOGGR and the CPUC is completed and released to the public. This bill would also require that the CPUC's required proceeding be completed by December 31, 2017.

This bill has been referred to the Senate Natural Resources and Water Committee, however, in an effort to expedite the process, Senator Stern gut-and-amended SB 146 into SB 57. SB 57 was introduced on December 8, 2016, which makes the bill available to be heard weeks before SB 146. SB 57 is also co-authored by Senator's Hertzberg, Wilk and Wiener. SB 57 will be heard on Thursday, February 9, 2017 in the Senate Natural Resources and Water Committee.

SB 174 (Lara and Leyva)

California's on-road heavy-duty diesel vehicles regulation requires diesel trucks and buses that operate in California to upgrade their vehicles in order to significantly reduce particulate matter, oxides of nitrogen, and other criteria pollutants. The regulation requires truckers to invest in the cleanest available equipment, cutting diesel soot by more than 99% and smog forming pollutants by more than 90%.

It is estimated that California's truck and bus rules will prevent an estimated 3,500 deaths in the state between 2010 and 2025. Diesel pollution from trucks and buses that do not meet these standards disproportionately increase regional smog and impact local health, particularly in low-income communities of color. Most of the industry has made the necessary investments to comply with the rule at the cost of approximately $200 million annually.

Unfortunately, because of the sheer volume of equipment, enforcement of this regulation has been challenging. The California Air Resources Board estimates that as many as 30% of the trucks on the road today do not comply with the rule. These trucks both pollute at a much higher rate and unfairly compete with compliant truckers, undercutting their investments in clean vehicles.

SB 174 will reduce emissions and level the playing field for compliant truckers by ensuring that all vehicles are in compliance with existing emission control laws as a condition of DMV registration. SB 174 requires proof of compliance with California's

Truck and Bus Regulation as a condition of DMV registration, similar to smog certification requirements for most vehicles on the road today.

SCAQMD Report
Gonzalez, Quintana, Hunter & Cruz, LLC
February 2, 2017

General Update

Following the release of the Governor's budget in January, the Department of Finance has released trailer bill language. Of note is the Cap and Trade extension that, among other small changes, simply strikes the sunset date of December 31, 2020. The language in its current form does not specify a new sunset date.

The following bills might be of interest to SCAQMD:

AB 91 (Cervantes - D) High Occupancy Vehicle Lanes

This bill would prohibit, commencing July 1, 2018, a high-occupancy vehicle lane from being established in the County of Riverside, unless that lane is established as a high-occupancy vehicle lane only during the hours of heavy commuter traffic, as determined by the department.

The bill would require any existing high-occupancy vehicle lane in the County of Riverside that is not a toll lane to be modified to operate as a high-occupancy lane under those same conditions.

The bill would authorize the department, on or after May 1, 2019, to reinstate 24-hour high-occupancy vehicle lanes in the County of Riverside if the department makes a specified determination, and would require the department to report to the Legislature on the impact on traffic of limiting the use of high-occupancy lanes only during the hours of heavy commuter traffic, as provided in the bill.

SB 41 (Galgiani – D) State Air Resources Board: Regulations

This bill would require the State Air Resources Board to deem a person, as defined, to be in compliance with all applicable rules and regulations of the state board and, notwithstanding the inadequacy of any required equipment, technologies, or practices, would prohibit the state board from requiring a person to expend further moneys to achieve compliance with, or from seeking to enforce against that person, the applicable rules and regulations, if specified conditions are met.

Toxic Waste Regulations Bill Package

AB 245 Hazardous Waste: Facilities (Gomez, Reyes, Santiago, and Cristina Garcia)

(1) Existing law, as part of the hazardous waste control law, requires a facility handling hazardous waste to obtain a hazardous waste facilities permit from the Department of Toxic Substances Control. Existing law requires the department to impose certain conditions on each hazardous waste facilities permit and authorizes the department to impose other conditions on a hazardous waste facilities permit, as specified. A violation of the hazardous waste control law is a crime.

This bill would require the department, within 90 days of receiving a renewal application for a hazardous waste facilities permit, to hold a public meeting for specified purposes relating to the renewal in or near the community in which the hazardous waste facility is located.

Existing law prohibits the department from issuing or renewing a permit to operate a hazardous waste facility unless the owner or operator of the facility establishes and maintains financial assurances.

This bill would require the department to review the financial assurances required to operate a hazardous waste facility at least once every 5 years. If the department's review finds the financial assurances for a facility to be inadequate, the bill would require the department to notify the owner or operator of the facility and would require the owner or operator to update and adopt adequate financial assurances within 90 days.

(2) Existing law requires the department, in the case of a release of hazardous waste or constituents into the environment from a hazardous waste facility that is required to obtain a permit, to pursue available remedies, including the issuance of an order for corrective action, before using available legal remedies, except in specified circumstances.

This bill would require the department, under specified circumstances, to request an owner or operator of a hazardous waste facility to submit to the department for review and approval a written cost estimate to cover activities associated with a corrective action based on available data, history of releases, and site activities, as specified.

The bill would require the owner or operator to submit the corrective action cost estimate within 60 days of the department's request.

The bill would require the owner or operator, within 90 days of the approval or the imposition of a corrective action cost estimate, as specified, to fund the cost estimate or enter into a schedule of compliance for assurances of financial responsibility for completing the corrective action.

AB 246 Hazardous Waste: Facilities: Permits (Gomez, Reyes, Santiago, and Cristina Garcia)
Existing law, as part of the hazardous waste control laws, requires a facility handling hazardous waste to obtain a hazardous waste facilities permit from the Department of Toxic Substances Control.

This bill would, as a condition for a new hazardous waste facilities permit or a renewal of a hazardous waste facilities permit, require an applicant to obtain a permit from the air quality management district or local air pollution control district and to maintain compliance with the requirements of that permit.

AB 247 Public health: childhood lead poisoning: Lead Advisory Taskforce (Gomez, Reyes, Santiago, and Cristina Garcia)
The bill would require, by April 1, 2018, the Office of Environmental Health Hazard Assessment to convene a Lead Advisory Taskforce, with a prescribed membership, to review and advise regarding policies and procedures to reduce childhood lead poisoning in the state.

The bill would require the taskforce to publish a recommended regulatory agenda that would identify sources of lead and ensure that regulatory standards are protective of health in the state.

AB 248 Hazardous Waste: Facilities: Permits (Gomez, Reyes, Santiago, and Cristina Garcia)
This bill would require, for a hazardous waste facilities permit that will expire on or before July 1, 2020, the owner or operator of a facility intending to extend the term of that permit to submit a complete Part A and Part B application for a permit renewal at least 6 months before the fixed term of the permit expires.

The bill would require, for a hazardous waste facilities permit that will expire after July 1, 2020, the owner or operator to submit a complete Part A and Part B application for a permit renewal at least 2 years before the fixed term of the permit expires.

The bill would provide that when a complete Part A and Part B renewal application and any other requested information has been submitted at least 6 months or at least 2 years, as applicable, before the end of the permit's fixed term, the permit is deemed extended until the application is approved or denied and the owner has exhausted all applicable rights of appeal.

The bill would also require the department, no later than 90 days after receiving a completed application for a hazardous waste facilities permit, to post on its Internet Web site a timeline with the estimated dates of key milestones in the application review process,

to note on its Internet Web site that these dates are estimates, and to update the dates as needed.

AB 249 Hazardous waste: civil penalties (Gomez, Reyes, Santiago, and Cristina Garcia)
Under existing law, a person who does not comply with the order is subject to a civil penalty of not more than $25,000 for each day of noncompliance.

This bill would increase these administrative and civil penalties to $37,500.

ATTACHMENT 4

AB 1 (Frazier)
Transportation Funding

Summary: This bill is an urgency statute that lays out a plan that proposes about $6 billion annually in new and redirected funding to address the urgent needs of the state's transportation system.

Specifically, it would, among other things, increase the gas tax and increase the vehicle registration fee, create a new $165 annual vehicle registration fee with an inflation adjustment for zero-emission motor vehicles, exclude the California Transportation Commission (CTC) from the California Transportation Agency (CalSTA) and create the Office of the Transportation Inspector General as an independent office in state government. This bill would also increase appropriations of moneys from the Greenhouse Gas Reduction Fund (GGRF) to 20% to the Transit and Intercity Rail Capital Program and to 10% to the Low Carbon Transit Operations Program annually.

Background: California's transportation revenues have not kept up with the need; California's gas tax hasn't been raised since 1994. As a result, California's freeway system faces a $59 billion maintenance shortfall over the next 10 years in order to keep it in a basic state of good repair, while local governments face a $78 billion shortfall over the next decade to adequately maintain the existing network of local streets and roads and bridges.

Funding for the California Highway, Local Street, and Road System
Existing law provides various sources of funding for transportation purposes, including funding for the state highway system and the local street and road system. These funding sources include, among others, fuel excise taxes, commercial vehicle weight fees, local transactions and use taxes, and federal funds. Existing law imposes certain registration fees on vehicles, with revenues from these fees deposited in the Motor Vehicle Account and used to fund the Department of Motor Vehicles and the Department of the California Highway Patrol. Existing law provides for the monthly transfer of excess balances in the Motor Vehicle Account to the State Highway Account.

California Transportation Commission
Existing law establishes in state government the Transportation Agency, which includes various departments and state entities, including the California Transportation Commission. Existing law vests the California Transportation Commission with specified powers, duties, and functions relative to transportation matters. Existing law requires the commission to retain independent authority to perform the duties and functions prescribed to it under any provision of law.

Trade Corridors Improvement Fund
The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 (Proposition 1B) created the Trade Corridors Improvement Fund and provided for allocation by the California Transportation Commission of $2 billion in bond funds for infrastructure improvements on highway and rail corridors that have a high volume of freight movement and for specified categories of projects eligible to receive these funds. Existing law continues the Trade Corridors Improvement Fund in existence in order to receive revenues from sources other than the bond act for these purposes.

Greenhouse Gas Reduction Fund
Existing law requires all moneys, except for fines and penalties, collected by the California Air Resources Board (CARB) from the auction or sale of allowances as part of a market-based compliance mechanism relative to reduction of greenhouse gas emissions to be deposited in the Greenhouse Gas Reduction Fund. Existing law continuously appropriates 10% of the annual proceeds of the fund to the Transit and Intercity Rail Capital Program and 5% of the annual proceeds of the fund to the Low Carbon Transit Operations Program.

Diesel Sales and Use Tax
Existing law, as of July 1, 2011, increases the sales and use tax on diesel and decreases the excise tax, as provided. Existing law requires the State Board of Equalization to annually modify both the gasoline and diesel excise tax rates on a going-forward basis so that the various changes in the taxes imposed on gasoline and diesel are revenue neutral.

Existing law, beyond the sales and use tax rate generally applicable, imposes an additional sales and use tax on diesel fuel at the rate of 1.75%, subject to certain exemptions, and provides for the net revenues collected from the additional tax to be transferred to the Public Transportation Account. Existing law continuously appropriates these and other revenues in the account to the Controller for allocation by formula to transportation agencies for public transit purposes under the State Transit Assistance Program. Existing law provides for appropriation of other revenues in the account to the Department of Transportation for various other transportation purposes, including intercity rail purposes.

Status: 1/19/2017 -- Referred to Assembly Comms. on TRANS. and NAT. RES.

Specific Provisions: Specifically, this bill would:

1. Increase the motor vehicle fuel (gasoline) tax, effective July 1, 2017, to an amount attributable to a raise in $0.12/gallon, phased in over three years with an adjustment for inflation; increase the annual vehicle registration fee to $38, effective October 1, 2017, with an adjustment for inflation; and increase the registration fee for a new annual vehicle to $165, applicable to zero-emission motor vehicles, with an adjustment for inflation, with the funds going to the Road Maintenance and Rehabilitation Program to address deferred maintenance on the state highway system and local street and road system.
2. Exclude the CTC from CalSTA, establish it as an entity in state government, and require it to act in an independent oversight role and make conforming changes.
3. Create the Office of the Transportation Inspector General in state government, as an independent office that would not be a subdivision of any other government entity, to ensure that all state agencies expending state transportation funds are operating efficiently, effectively, and in compliance with federal and state laws.
    a. Provide for the Governor to appoint the Transportation Inspector General for a 6-year term, subject to confirmation by the Senate, and would provide that the Transportation Inspector General may not be removed from office during the term except for good cause.
4. Deposit the revenues attributable to a $0.20/gallon increase in the diesel fuel excise tax imposed by the bill into the Trade Corridors Improvement Fund and would require revenues apportioned to the state from the national highway freight program established by the federal

Fixing America's Surface Transportation Act to be allocated for trade corridor improvement projects.

5. Increase the additional sales and use tax rate on diesel fuel by an additional 4% and beginning July 1, 2020, and every third year thereafter, require the State Board of Equalization to recalculate the gasoline and diesel excise tax rates and the additional sales and use tax rates on diesel fuel based upon the percentage change in the California Consumer Price Index transmitted to the board by the Department of Finance.
6. Beginning in the 2017-18 fiscal year, continuously appropriate 20% of annual proceeds collected by the California Air Resources Board from the auction or sale of allowances as part of a market-based compliance mechanism related to the reduction of greenhouse gas emissions into the Transit and Intercity Rail Capital Program and 10% of those annual proceeds to the Low Carbon Transit Operations Program.

Impacts on AQMD's Mission, Operations or Initiatives: This bill would generate funds that would be added to the existing Trade Corridors Improvement Fund created under Proposition 1B. SCAQMD received approximately $507,298,680 in Proposition 1B funds focused on improving air quality, as of December 2016, which will fund over 8,000 projects and reduce an estimated 2,334,000 lbs. of PM2.5 and 87,663,000 lbs. of NOx. The continuation of the portion of the program to benefit air quality would assist in the development of additional projects which would help reduce air pollution generated by goods movement operations and protect the health of South Coast residents.

SCAQMD Proposal: Staff recommends that SCAQMD work with the author, legislative leadership, and local partners, such as the Ports of Los Angeles and Long Beach, to secure amendments to this large transportation infrastructure bill that would provide funding for projects that will reduce air pollution and promote the development of zero and near-zero emission transportation technology. Specifically, a critical goal would be to increase available funding for use in providing for clean goods movement activities coming from the ports and throughout the trade corridors that exist within the South Coast region. Staff also recommends working to eliminate disincentives for zero emission vehicles included in the current legislation and examining whether CEQA exemptions included in the bill have a detrimental impact.

Recommended Position: Work with Author

ASSEMBLY BILL No. 1

Introduced by Assembly Member Frazier
(Coauthors: Assembly Members Low, Mullin, and Santiago)

December 5, 2016

An act to amend Sections 13975, 14500, 14526.5, and 16965 of, to add Sections 14033, 14526.7, and 16321 to, to add Part 5.1 (commencing with Section 14460) to Division 3 of Title 2 of, and to repeal Section 14534.1 of, the Government Code, to amend Section 39719 of the Health and Safety Code, to amend Section 21080.37 of, and to add Division 13.6 (commencing with Section 21200) to, the Public Resources Code, to amend Section 99312.1 of, and to add Section 99314.9 to, the Public Utilities Code, to amend Sections 6051.8, 6201.8, 7360, 8352.4, 8352.5, 8352.6, and 60050 of the Revenue and Taxation Code, to amend Sections 183.1, 2192, 2192.1, and 2192.2 of, to add Sections 820.1, 2103.1, and 2192.4 to, and to add Chapter 2 (commencing with Section 2030) to Division 3 of, the Streets and Highways Code, and to add Sections 9250.3, 9250.6, and 9400.5 to the Vehicle Code, relating to transportation, making an appropriation therefor, and declaring the urgency thereof, to take effect immediately.

LEGISLATIVE COUNSEL'S DIGEST

AB 1, as introduced, Frazier. Transportation funding.

(1) Existing law provides various sources of funding for transportation purposes, including funding for the state highway system and the local street and road system. These funding sources include, among others, fuel excise taxes, commercial vehicle weight fees, local transactions and use taxes, and federal funds. Existing law imposes certain registration fees on vehicles, with revenues from these fees deposited

in the Motor Vehicle Account and used to fund the Department of Motor Vehicles and the Department of the California Highway Patrol. Existing law provides for the monthly transfer of excess balances in the Motor Vehicle Account to the State Highway Account.

This bill would create the Road Maintenance and Rehabilitation Program to address deferred maintenance on the state highway system and the local street and road system. The bill would require the California Transportation Commission to adopt performance criteria, consistent with a specified asset management plan, to ensure efficient use of certain funds available for the program. The bill would provide for the deposit of various funds for the program in the Road Maintenance and Rehabilitation Account, which the bill would create in the State Transportation Fund, including revenues attributable to a $0.012 per gallon increase in the motor vehicle fuel (gasoline) tax imposed by the bill with an inflation adjustment, as provided, an increase of $38 in the annual vehicle registration fee with an inflation adjustment, as provided, a new $165 annual vehicle registration fee with an inflation adjustment, as provided, applicable to zero-emission motor vehicles, as defined, and certain miscellaneous revenues described in (7) below that are not restricted as to expenditure by Article XIX of the California Constitution.

This bill would annually set aside $200,000,000 of the funds available for the program to fund road maintenance and rehabilitation purposes in counties that have sought and received voter approval of taxes or that have imposed fees, including uniform developer fees, as defined, which taxes or fees are dedicated solely to transportation improvements. These funds would be continuously appropriated for allocation pursuant to guidelines to be developed by the California Transportation Commission in consultation with local agencies. The bill would require $80,000,000 of the funds available for the program to be annually transferred to the State Highway Account for expenditure on the Active Transportation Program. The bill would require $30,000,000 of the funds available for the program in each of 4 fiscal years beginning in 2017–18 to be transferred to the Advance Mitigation Fund created by the bill pursuant to (12) below. The bill would continuously appropriate $2,000,000 annually of the funds available for the program to the California State University for the purpose of conducting transportation research and transportation-related workforce education, training, and development, and $3,000,000 annually to the institutes for transportation studies at the University of California. The bill would require the

remaining funds available for the program to be allocated 50% for maintenance of the state highway system or to the state highway operation and protection program and 50% to cities and counties pursuant to a specified formula. The bill would impose various requirements on the department and agencies receiving these funds. The bill would authorize a city or county to spend its apportionment of funds under the program on transportation priorities other than those allowable pursuant to the program if the city's or county's average Pavement Condition Index meets or exceeds 80.

The bill would also require the department to annually identify savings achieved through efficiencies implemented at the department and to propose, from the identified savings, an appropriation to be included in the annual Budget Act of up to $70,000,000 from the State Highway Account for expenditure on the Active Transportation Program.

(2) Existing law establishes in state government the Transportation Agency, which includes various departments and state entities, including the California Transportation Commission. Existing law vests the California Transportation Commission with specified powers, duties, and functions relative to transportation matters. Existing law requires the commission to retain independent authority to perform the duties and functions prescribed to it under any provision of law.

This bill would exclude the California Transportation Commission from the Transportation Agency, establish it as an entity in state government, and require it to act in an independent oversight role. The bill would also make conforming changes.

(3) Existing law creates various state agencies, including the Department of Transportation, the High-Speed Rail Authority, the Department of the California Highway Patrol, the Department of Motor Vehicles, and the State Air Resources Board, with specified powers and duties. Existing law provides for the allocation of state transportation funds to various transportation purposes.

This bill would create the Office of the Transportation Inspector General in state government, as an independent office that would not be a subdivision of any other government entity, to ensure that all of the above-referenced state agencies and all other state agencies expending state transportation funds are operating efficiently, effectively, and in compliance with federal and state laws. The bill would provide for the Governor to appoint the Transportation Inspector General for a 6-year term, subject to confirmation by the Senate, and would provide that the Transportation Inspector General may not be

removed from office during the term except for good cause. The bill would specify the duties and responsibilities of the Transportation Inspector General and would require an annual report to the Legislature and Governor.

This bill would require the department to update the Highway Design Manual to incorporate the "complete streets" design concept by July 1, 2017.

(4) Existing law provides for loans of revenues from various transportation funds and accounts to the General Fund, with various repayment dates specified.

This bill would require the Department of Finance, on or before January 1, 2017, to compute the amount of outstanding loans made from specified transportation funds. The bill would require the Department of Transportation to prepare a loan repayment schedule and would require the outstanding loans to be repaid pursuant to that schedule, as prescribed. The bill would appropriate funds for that purpose from the Budget Stabilization Account. The bill would require the repaid funds to be transferred, pursuant to a specified formula, to cities and counties and to the department for maintenance of the state highway system and for purposes of the state highway operation and protection program.

(5) The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 (Proposition 1B) created the Trade Corridors Improvement Fund and provided for allocation by the California Transportation Commission of $2 billion in bond funds for infrastructure improvements on highway and rail corridors that have a high volume of freight movement and for specified categories of projects eligible to receive these funds. Existing law continues the Trade Corridors Improvement Fund in existence in order to receive revenues from sources other than the bond act for these purposes.

This bill would deposit the revenues attributable to a $0.20 per gallon increase in the diesel fuel excise tax imposed by the bill into the Trade Corridors Improvement Fund. The bill would require revenues apportioned to the state from the national highway freight program established by the federal Fixing America's Surface Transportation Act to be allocated for trade corridor improvement projects approved pursuant to these provisions.

Existing law requires the commission, in determining projects eligible for funding, to consult various state freight and regional infrastructure and goods movement plans and the statewide port master plan.

This bill would revise the list of plans to be consulted by the commission when determining eligible projects for funding. The bill would also expand eligible projects to include, among others, rail landside access improvements, landside freight access improvements to airports, and certain capital and operational improvements.

(6) Existing law requires all moneys, except for fines and penalties, collected by the State Air Resources Board from the auction or sale of allowances as part of a market-based compliance mechanism relative to reduction of greenhouse gas emissions to be deposited in the Greenhouse Gas Reduction Fund. Existing law continuously appropriates 10% of the annual proceeds of the fund to the Transit and Intercity Rail Capital Program and 5% of the annual proceeds of the fund to the Low Carbon Transit Operations Program.

This bill would, beginning in the 2017–18 fiscal year, instead continuously appropriate 20% of those annual proceeds to the Transit and Intercity Rail Capital Program and 10% of those annual proceeds to the Low Carbon Transit Operations Program, thereby making an appropriation.

(7) Article XIX of the California Constitution restricts the expenditure of revenues from taxes imposed by the state on fuels used in motor vehicles upon public streets and highways to street and highway and certain mass transit purposes. Existing law requires certain miscellaneous revenues deposited in the State Highway Account that are not restricted as to expenditure by Article XIX of the California Constitution to be transferred to the Transportation Debt Service Fund in the State Transportation Fund, as specified, and requires the Controller to transfer from the fund to the General Fund an amount of those revenues necessary to offset the current year debt service made from the General Fund on general obligation transportation bonds issued pursuant to Proposition 116 of 1990.

This bill would delete the transfer of these miscellaneous revenues to the Transportation Debt Service Fund, thereby eliminating the offsetting transfer to the General Fund for debt service on general obligation transportation bonds issued pursuant to Proposition 116 of 1990. The bill, subject to a specified exception, would instead require the miscellaneous revenues to be retained in the State Highway Account and to be deposited in the Road Maintenance and Rehabilitation Account.

(8) Article XIX of the California Constitution requires gasoline excise tax revenues from motor vehicles traveling upon public streets and

highways to be deposited in the Highway Users Tax Account, for allocation to city, county, and state transportation purposes. Existing law generally provides for statutory allocation of gasoline excise tax revenues attributable to other modes of transportation, including aviation, boats, agricultural vehicles, and off-highway vehicles, to particular accounts and funds for expenditure on purposes associated with those other modes, except that a specified portion of these gasoline excise tax revenues is deposited in the General Fund. Expenditure of the gasoline excise tax revenues attributable to those other modes is not restricted by Article XIX of the California Constitution.

This bill, commencing July 1, 2017, would instead transfer to the Highway Users Tax Account for allocation to state and local transportation purposes under a specified formula the portion of gasoline excise tax revenues currently being deposited in the General Fund that are attributable to boats, agricultural vehicles, and off-highway vehicles. Because that account is continuously appropriated, the bill would make an appropriation.

(9) Existing law, as of July 1, 2011, increases the sales and use tax on diesel and decreases the excise tax, as provided. Existing law requires the State Board of Equalization to annually modify both the gasoline and diesel excise tax rates on a going-forward basis so that the various changes in the taxes imposed on gasoline and diesel are revenue neutral.

This bill would eliminate the annual rate adjustment to maintain revenue neutrality for the gasoline and diesel excise tax rates and would reimpose the higher gasoline excise tax rate that was in effect on July 1, 2010, in addition to the increase in the rate described in (1) above.

Existing law, beyond the sales and use tax rate generally applicable, imposes an additional sales and use tax on diesel fuel at the rate of 1.75%, subject to certain exemptions, and provides for the net revenues collected from the additional tax to be transferred to the Public Transportation Account. Existing law continuously appropriates these revenues to the Controller for allocation by formula to transportation agencies for public transit purposes under the State Transit Assistance Program.

This bill would increase the additional sales and use tax on diesel fuel by an additional 3.5%. By increasing the revenues deposited in the Public Transportation Account that are continuously appropriated, the bill would thereby make an appropriation. The bill would restrict expenditures of revenues from this increase in the sales and use tax on diesel fuel to transit capital purposes and certain transit services and

would require a recipient transit agency to comply with certain requirements, including submitting a list of proposed projects to the Department of Transportation, as a condition of receiving a portion of these funds. The bill would require the Controller to compute and publish quarterly proposed allocations for each eligible recipient agency under the State Transit Assistance Program. The bill would require an existing required audit of transit operator finances to verify that these new revenues have been expended in conformance with these specific restrictions and all other generally applicable requirements.

This bill would, beginning July 1, 2019, and every 3rd year thereafter, require the State Board of Equalization to recompute the gasoline and diesel excise tax rates and the additional sales and use tax rate on diesel fuel based upon the percentage change in the California Consumer Price Index transmitted to the board by the Department of Finance, as prescribed.

(10) Existing law requires the Department of Transportation to prepare a state highway operation and protection program every other year for the expenditure of transportation capital improvement funds for projects that are necessary to preserve and protect the state highway system, excluding projects that add new traffic lanes. The program is required to be based on an asset management plan, as specified. Existing law requires the department to specify, for each project in the program the capital and support budget and projected delivery date for various components of the project. Existing law provides for the California Transportation Commission to review and adopt the program, and authorizes the commission to decline and adopt the program if it determines that the program is not sufficiently consistent with the asset management plan.

The bill would require the commission, as part of its review of the program, to hold at least one hearing in northern California and one hearing in southern California regarding the proposed program. The bill would require the department to submit any change to a programmed project as an amendment to the commission for its approval.

This bill, on and after August 1, 2017, would also require the commission to make an allocation of all capital and support costs for each project in the program, and would require the department to submit a supplemental project allocation request to the commission for each project that experiences cost increases above the amounts in its allocation. The bill would require the commission to establish guidelines to provide exceptions to the requirement for a supplemental project

allocation requirement that the commission determines are necessary to ensure that projects are not unnecessarily delayed.

(11) Existing law imposes weight fees on the registration of commercial motor vehicles and provides for the deposit of net weight fee revenues into the State Highway Account. Existing law provides for the transfer of certain weight fee revenues from the State Highway Account to the Transportation Debt Service Fund to reimburse the General Fund for payment of debt service on general obligation bonds issued for transportation purposes. Existing law also provides for the transfer of certain weight fee revenues to the Transportation Bond Direct Payment Account for direct payment of debt service on designated bonds, which are defined to be certain transportation general obligation bonds issued pursuant to Proposition 1B of 2006. Existing law also provides for loans of weight fee revenues to the General Fund to the extent the revenues are not needed for bond debt service purposes, with the loans to be repaid when the revenues are later needed for those purposes, as specified.

This bill, notwithstanding these provisions or any other law, would only authorize specified amounts of weight fee revenues to be transferred from the State Highway Account to the Transportation Debt Service Fund, the Transportation Bond Direct Payment Account, or any other fund or account for the purpose of payment of the debt service on transportation general obligation bonds in accordance with a prescribed schedule, with no more than $500,000,000 to be transferred in the 2021–22 and subsequent fiscal years. The bill would also prohibit loans of weight fee revenues to the General Fund.

(12) The California Environmental Quality Act (CEQA) requires a lead agency, as defined, to prepare, or cause to be prepared, and certify the completion of, an environmental impact report on a project that it proposes to carry out or approve that may have a significant effect on the environment or to adopt a negative declaration if it finds that the project will not have that effect. CEQA also requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment.

CEQA, until January 1, 2020, exempts a project or an activity to repair, maintain, or make minor alterations to an existing roadway, as defined, other than a state roadway, if the project or activity is carried

out by a city or county with a population of less than 100,000 persons to improve public safety and meets other specified requirements.

This bill would extend the above-referenced exemption indefinitely and delete the limitation of the exemption to projects or activities in cities and counties with a population of less than 100,000 persons. The bill would also expand the exemption to include state roadways.

This bill would also establish the Advance Mitigation Program in the Department of Transportation. The bill would authorize the department to undertake mitigation measures in advance of construction of a planned transportation project. The bill would require the department to establish a steering committee to advise the department on advance mitigation measures and related matters. The bill would create the Advance Mitigation Fund as a continuously appropriated revolving fund, to be funded initially from the Road Maintenance and Rehabilitation Program pursuant to (1) above. The bill would provide for reimbursement of the revolving fund at the time a planned transportation project benefiting from advance mitigation is constructed.

(13) Existing federal law requires the United States Secretary of Transportation to carry out a surface transportation project delivery program, under which the participating states assume certain responsibilities for environmental review and clearance of transportation projects that would otherwise be the responsibility of the federal government. Existing law, until January 1, 2017, when these provisions are repealed, provides that the State of California consents to the jurisdiction of the federal courts with regard to the compliance, discharge, or enforcement of the responsibilities the Department of Transportation assumed as a participant in this program.

This bill would reenact these provisions.

(14) This bill would declare that it is to take effect immediately as an urgency statute.

Vote: ⅔. Appropriation: yes. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) Over the next 10 years, the state faces a $59 billion shortfall to adequately maintain the existing state highway system in order to keep it in a basic state of good repair.

(b) Similarly, cities and counties face a $78 billion shortfall over the next decade to adequately maintain the existing network of local streets and roads.

(c) Statewide taxes and fees dedicated to the maintenance of the system have not been increased in more than 20 years, with those revenues losing more than 55 percent of their purchasing power, while costs to maintain the system have steadily increased and much of the underlying infrastructure has aged past its expected useful life.

(d) California motorists are spending $17 billion annually in extra maintenance and car repair bills, which is more than $700 per driver, due to the state's poorly maintained roads.

(e) Failing to act now to address this growing problem means that more drastic measures will be required to maintain our system in the future, essentially passing the burden on to future generations instead of doing our job today.

(f) A funding program will help address a portion of the maintenance backlog on the state's road system and will stop the growth of the problem.

(g) Modestly increasing various fees can spread the cost of road repairs broadly to all users and beneficiaries of the road network without overburdening any one group.

(h) Improving the condition of the state's road system will have a positive impact on the economy as it lowers the transportation costs of doing business, reduces congestion impacts for employees, and protects property values in the state.

(i) The federal government estimates that increased spending on infrastructure creates more than 13,000 jobs per $1 billion spent.

(j) Well-maintained roads benefit all users, not just drivers, as roads are used for all modes of transport, whether motor vehicles, transit, bicycles, or pedestrians.

(k) Well-maintained roads additionally provide significant health benefits and prevent injuries and death due to crashes caused by poorly maintained infrastructure.

(*l*) A comprehensive, reasonable transportation funding package will do all of the following:

(1) Ensure these transportation needs are addressed.

(2) Fairly distribute the economic impact of increased funding.

(3) Restore the gas tax rate previously reduced by the State Board of Equalization pursuant to the gas tax swap.

(4) Direct increased revenue to the state's highest transportation needs.

SEC. 2. Section 13975 of the Government Code is amended to read:

13975. There is in the state government the Transportation Agency. The agency consists of the Department of the California Highway Patrol, the ~~California Transportation Commission, the~~ Department of Motor Vehicles, the Department of Transportation, the High-Speed Rail Authority, and the Board of Pilot Commissioners for the Bays of San Francisco, San Pablo, and Suisun.

SEC. 3. Section 14033 is added to the Government Code, to read:

14033. On or before July 1, 2017, the department shall update the Highway Design Manual to incorporate the "complete streets" design concept.

SEC. 4. Part 5.1 (commencing with Section 14460) is added to Division 3 of Title 2 of the Government Code, to read:

PART 5.1. OFFICE OF THE TRANSPORTATION INSPECTOR GENERAL

14460. (a) There is hereby created in state government the independent Office of the Transportation Inspector General, which shall not be a subdivision of any other governmental entity, to ensure that the Department of Transportation, the High-Speed Rail Authority, the Department of the California Highway Patrol, the Department of Motor Vehicles, the State Air Resources Board, and all other state agencies expending state transportation funds are operating efficiently, effectively, and in compliance with applicable federal and state laws.

(b) The Governor shall appoint, subject to confirmation by the Senate, the Transportation Inspector General to a six-year term. The Transportation Inspector General may not be removed from office during that term, except for good cause. A finding of good cause may include substantial neglect of duty, gross misconduct, or conviction of a crime. The reasons for removal of the Transportation Inspector General shall be stated in writing and shall include the basis for removal. The writing shall be sent to the Secretary of the Senate and the Chief Clerk of the Assembly

at the time of the removal and shall be deemed to be a public document.

14461. The Transportation Inspector General shall review policies, practices, and procedures and conduct audits and investigations of activities involving state transportation funds in consultation with all affected state agencies. Specifically, the Transportation Inspector General's duties and responsibilities shall include, but not be limited to, all of the following:

(a) To examine the operating practices of all state agencies expending state transportation funds to identify fraud and waste, opportunities for efficiencies, and opportunities to improve the data used to determine appropriate project resource allocations.

(b) To identify best practices in the delivery of transportation projects and develop policies or recommend proposed legislation enabling state agencies to adopt these practices when practicable.

(c) To provide objective analysis of and, when possible, offer solutions to concerns raised by the public or generated within agencies involving the state's transportation infrastructure and project delivery methods.

(d) To conduct, supervise, and coordinate audits and investigations relating to the programs and operations of all state transportation agencies with state-funded transportation projects.

(e) To recommend policies promoting economy and efficiency in the administration of programs and operations of all state agencies with state-funded transportation projects.

(f) To ensure that the Secretary of Transportation and the Legislature are fully and currently informed concerning fraud or other serious abuses or deficiencies relating to the expenditure of funds or administration of programs and operations.

14462. The Transportation Inspector General shall report at least annually to the Governor and Legislature with a summary of his or her findings, investigations, and audits. The summary shall be posted on the Transportation Inspector General's Internet Web site and shall otherwise be made available to the public upon its release to the Governor and Legislature. The summary shall include, but need not be limited to, significant problems discovered by the Transportation Inspector General and whether recommendations of the Transportation Inspector General relative to investigations and audits have been implemented by the affected

agencies. The report shall be submitted to the Legislature in compliance with Section 9795.

SEC. 5. Section 14500 of the Government Code is amended to read:

14500. There is in ~~the Transportation Agency~~ *state government* a California Transportation Commission. *The commission shall act in an independent oversight role.*

SEC. 6. Section 14526.5 of the Government Code is amended to read:

14526.5. (a) Based on the asset management plan prepared and approved pursuant to Section 14526.4, the department shall prepare a state highway operation and protection program for the expenditure of transportation funds for major capital improvements that are necessary to preserve and protect the state highway system. Projects included in the program shall be limited to ~~capital~~ improvements relative to ~~the~~ maintenance, safety, ~~operation, and rehabilitation~~ *rehabilitation, and operation* of state highways and bridges that do not add a new traffic lane to the system.

(b) The program shall include projects that are expected to be advertised prior to July 1 of the year following submission of the program, but which have not yet been funded. The program shall include those projects for which construction is to begin within four fiscal years, starting July 1 of the year following the year the program is submitted.

(c) *(1)* The department, at a minimum, shall specify, for each project in the state highway operation and protection program, the capital and support ~~budget, as well as a projected delivery date,~~ *budget* for each of the following project components:

~~(1) Completion of project~~

(A) Project approval and environmental documents.

~~(2) Preparation of plans,~~

(B) Plans, specifications, and estimates.

~~(3) Acquisition of rights-of-way, including, but not limited to, support activities.~~

(C) Rights-of-way.

(D) Construction.

(2) The department shall specify, for each project in the state highway operation and protection program, a project delivery date for each of the following components:

(A) Environmental document completion.

(B) Plans, specifications, and estimate completion.

(C) Right-of-way certification.

~~(4)~~

(D) Start of construction.

(d) The ~~program~~ *department* shall ~~be submitted~~ *submit its proposed program* to the commission not later than January 31 of each even-numbered year. Prior to submitting ~~the plan,~~ *its proposed program,* the department shall make a draft of its proposed program available to transportation planning agencies for review and comment and shall include the comments in its submittal to the commission. *The department shall provide the commission with detailed information for all programmed projects, including, but not limited to, cost, scope, schedule, and performance metrics as determined by the commission.*

(e) The commission ~~may~~ *shall* review the *proposed* program relative to its overall adequacy, consistency with the asset management plan prepared and approved pursuant to Section 14526.4 and funding priorities established in Section 167 of the Streets and Highways Code, the level of annual funding needed to implement the program, and the impact of those expenditures on the state transportation improvement program. The commission shall adopt the program and submit it to the Legislature and the Governor not later than April 1 of each even-numbered year. The commission may decline to adopt the program if the commission determines that the program is not sufficiently consistent with the asset management plan prepared and approved pursuant to Section 14526.4.

(f) As part of the commission's review of the program required pursuant to subdivision (a), the commission shall hold at least one hearing in northern California and one hearing in southern California regarding the proposed program.

~~(f)~~

(g) Expenditures for these projects shall not be subject to Sections 188 and 188.8 of the Streets and Highways Code.

(h) Following adoption of the state highway operation and protection program by the commission, any change to a programmed project shall be submitted as an amendment by the department to the commission for its approval before the change may be implemented.

SEC. 7. Section 14526.7 is added to the Government Code, to read:

14526.7. (a) On and after August 1, 2017, an allocation by the commission of all capital and support costs for each project in the state highway operation and protection program shall be required.

(b) For a project that experiences increases in capital or support costs above the amounts in the commission's allocation pursuant to subdivision (a), a supplemental project allocation request shall be submitted by the department to the commission for approval.

(c) The commission shall establish guidelines to provide exceptions to the requirement of subdivision (b) that the commission determines are necessary to ensure that projects are not unnecessarily delayed.

SEC. 8. Section 14534.1 of the Government Code is repealed.

~~14534.1. Notwithstanding Section 12850.6 or subdivision (b) of Section 12800, as added to this code by the Governor's Reorganization Plan No. 2 of 2012 during the 2011–12 Regular Session, the commission shall retain independent authority to perform those duties and functions prescribed to it under any provision of law.~~

SEC. 9. Section 16321 is added to the Government Code, to read:

16321. (a) Notwithstanding any other law, on or before January 1, 2017, the Department of Finance shall compute the amount of outstanding loans made from the State Highway Account, the Motor Vehicle Fuel Account, the Highway Users Tax Account, and the Motor Vehicle Account to the General Fund. The department shall prepare a loan repayment schedule, pursuant to which the outstanding loans shall be repaid, as follows:

(1) On or before June 30, 2017, 50 percent of the outstanding loan amounts.

(2) On or before June 30, 2018, the remainder of the outstanding loan amounts.

(b) Notwithstanding any other law, as the loans are repaid pursuant to this section, the repaid funds shall be transferred in the following manner:

(1) Fifty percent to cities and counties pursuant to clauses (i) and (ii) of subparagraph (C) of paragraph (3) of subdivision (a) of Section 2103 of the Streets and Highways Code.

(2) Fifty percent to the department for maintenance of the state highway system and for purposes of the state highway operation and protection program.

(c) Funds for loan repayments pursuant to this section are hereby appropriated from the Budget Stabilization Account pursuant to subclause (II) of clause (ii) of subparagraph (B) of paragraph (1) of subdivision (c) of Section 20 of Article XVI of the California Constitution.

SEC. 10. Section 16965 of the Government Code is amended to read:

16965. (a) (1) The Transportation Debt Service Fund is hereby created in the State Treasury. Moneys in the fund shall be dedicated to all of the following purposes:

(A) Payment of debt service with respect to designated bonds, as defined in subdivision (c) of Section 16773, and as further provided in paragraph (3) and subdivision (b).

(B) To reimburse the General Fund for debt service with respect to bonds.

(C) To redeem or retire bonds, pursuant to Section 16774, maturing in a subsequent fiscal year.

(2) The bonds eligible under subparagraph (B) or (C) of paragraph (1) include bonds issued pursuant to the ~~Clean Air and Transportation Improvement Act of 1990 (Part 11.5 (commencing with Section 99600) of Division 10 of the Public Utilities Code), the~~ Passenger Rail and Clean Air Bond Act of 1990 (Chapter 17 (commencing with Section 2701) of Division 3 of the Streets and Highways Code), the Seismic Retrofit Bond Act of 1996 (Chapter 12.48 (commencing with Section 8879) of Division 1 of Title 2), and the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century (Chapter 20 (commencing with Section 2704) of Division 3 of the Streets and Highways Code), and nondesignated bonds under Proposition 1B, as defined in subdivision (c) of Section 16773.

(3) (A) The Transportation Bond Direct Payment Account is hereby created in the State Treasury, as a subaccount within the Transportation Debt Service Fund, for the purpose of directly paying the debt service, as defined in paragraph (4), of designated bonds of Proposition 1B, as defined in subdivision (c) of Section 16773. Notwithstanding Section 13340, moneys in the Transportation Bond Direct Payment Account are continuously

appropriated for payment of debt service with respect to designated bonds as provided in subdivision (c) of Section 16773. So long as any designated bonds remain outstanding, the moneys in the Transportation Bond Direct Payment Account may not be used for any other purpose, and may not be borrowed by or available for transfer to the General Fund pursuant to Section 16310 or any similar law, or to the General Cash Revolving Fund pursuant to Section 16381 or any similar law.

(B) Once the Treasurer makes a certification that payment of debt service with respect to all designated bonds has been paid or provided for, any remaining moneys in the Transportation Bond Direct Payment Account shall be transferred back to the Transportation Debt Service Fund.

(C) The moneys in the Transportation Bond Direct Payment Account shall be invested in the Surplus Money Investment Fund, and all investment earnings shall accrue to the account.

(D) The Controller may establish subaccounts within the Transportation Bond Direct Payment Account as may be required by the resolution, indenture, or other documents governing any designated bonds.

(4) For purposes of this subdivision and subdivision (b), and subdivision (c) of Section 16773, "debt service" means payment of all of the following costs and expenses with respect to any designated bond:

(A) The principal of and interest on the bonds.

(B) Amounts payable as the result of tender on any bonds, as described in clause (iv) of subparagraph (B) of paragraph (1) of subdivision (d) of Section 16731.

(C) Amounts payable under any contractual obligation of the state to repay advances and pay interest thereon under a credit enhancement or liquidity agreement as described in clause (iv) of subparagraph (B) of paragraph (1) of subdivision (d) of Section 16731.

(D) Any amount owed by the state to a counterparty after any offset for payments owed to the state on any hedging contract as described in subparagraph (A) of paragraph (2) of subdivision (d) of Section 16731.

(b) From the moneys transferred to the fund pursuant to paragraph (2) or (3) of subdivision (c) of Section 9400.4 of the Vehicle Code, there shall first be deposited into the Transportation

Bond Direct Payment Account in each month sufficient funds to equal the amount designated in a certificate submitted by the Treasurer to the Controller and the Director of Finance at the start of each fiscal year, and as may be modified by the Treasurer thereafter upon issuance of any new issue of designated bonds or upon change in circumstances that requires such a modification. This certificate shall be calculated by the Treasurer to identify, for each month, the amount necessary to fund all of the debt service with respect to all designated bonds. This calculation shall be done in a manner provided in the resolution, indenture, or other documents governing the designated bonds. In the event that transfers to the Transportation Bond Direct Payment Account in any month are less than the amounts required in the Treasurer's certificate, the shortfall shall carry over to be part of the required payment in the succeeding month or months.

(c) The state hereby covenants with the holders from time to time of any designated bonds that it will not alter, amend, or restrict the provisions of subdivision (c) of Section 16773 of the Government Code, or Sections 9400, 9400.1, 9400.4, and 42205 of the Vehicle Code, which provide directly or indirectly for the transfer of weight fees to the Transportation Debt Service Fund or the Transportation Bond Direct Payment Account, or subdivisions (a) and (b) of this section, or reduce the rate of imposition of vehicle weight fees under Sections 9400 and 9400.1 of the Vehicle Code as they existed on the date of the first issuance of any designated bonds, if that alteration, amendment, restriction, or reduction would result in projected weight fees for the next fiscal year determined by the Director of Finance being less than two times the maximum annual debt service with respect to all outstanding designated bonds, as such calculation is determined pursuant to the resolution, indenture, or other documents governing the designated bonds. The state may include this covenant in the resolution, indenture, or other documents governing the designated bonds.

(d) Once the required monthly deposit, including makeup of any shortfalls from any prior month, has been made pursuant to subdivision (b), from moneys transferred to the fund pursuant to paragraph (2) or (3) of subdivision (c) of Section 9400.4 of the Vehicle Code, or pursuant to Section 16965.1 or 63048.67, the Controller shall transfer as an expenditure reduction to the General

Fund any amount necessary to offset the cost of current year debt service payments made from the General Fund with respect to any bonds issued pursuant to Proposition 192 (1996) and three-quarters of the amount of current year debt service payments made from the General Fund with respect to any nondesignated bonds, as defined in subdivision (c) of Section 16773, issued pursuant to Proposition 1B (2006). In the alternative, these funds may also be used to redeem or retire the applicable bonds, pursuant to Section 16774, maturing in a subsequent fiscal year as directed by the Director of Finance.

~~(e) From moneys transferred to the fund pursuant to Section 183.1 of the Streets and Highways Code, the Controller shall transfer as an expenditure reduction to the General Fund any amount necessary to offset the cost of current year debt service payments made from the General Fund with respect to any bonds issued pursuant to Proposition 116 (1990). In the alternative, these funds may also be used to redeem or retire the applicable bonds, pursuant to Section 16774, maturing in a subsequent fiscal year as directed by the Director of Finance.~~

~~(f)~~

(e) Once the required monthly deposit, including makeup of any shortfalls from any prior month, has been made pursuant to subdivision (b), from moneys transferred to the fund pursuant to paragraph (2) or (3) of subdivision (c) of Section 9400.4 of the Vehicle Code, or pursuant to Section 16965.1 or 63048.67, the Controller shall transfer as an expenditure reduction to the General Fund any amount necessary to offset the eligible cost of current year debt service payments made from the General Fund with respect to any bonds issued pursuant to Proposition 108 (1990) and Proposition 1A (2008), and one-quarter of the amount of current year debt service payments made from the General Fund with respect to any nondesignated bonds, as defined in subdivision (c) of Section 16773, issued pursuant to Proposition 1B (2006). The Department of Finance shall notify the Controller by July 30 of every year of the percentage of debt service that is expected to be paid in that fiscal year with respect to bond-funded projects that qualify as eligible guideway projects consistent with the requirements applicable to the expenditure of revenues under Article XIX of the California Constitution, and the Controller shall make payments only for those eligible projects. In the alternative,

these funds may also be used to redeem or retire the applicable bonds, pursuant to Section 16774, maturing in a subsequent fiscal year as directed by the Director of Finance.

~~(g)~~

(f) On or before the second business day following the date on which transfers are made to the Transportation Debt Service Fund, and after the required monthly deposits for that month, including makeup of any shortfalls from any prior month, have been made to the Transportation Bond Direct Payment Account, the Controller shall transfer the funds designated for reimbursement of bond debt service with respect to nondesignated bonds, as defined in subdivision (c) of Section 16773, and other bonds identified in subdivisions ~~(d), (e),~~*(d)* and ~~(f)~~*(e)* in that month from the fund to the General Fund pursuant to this section.

SEC. 11. Section 39719 of the Health and Safety Code is amended to read:

39719. (a) The Legislature shall appropriate the annual proceeds of the fund for the purpose of reducing greenhouse gas emissions in this state in accordance with the requirements of Section 39712.

(b) To carry out a portion of the requirements of subdivision (a), annual proceeds are continuously appropriated for the following:

(1) Beginning in the ~~2015–16~~ *2017–18* fiscal year, and notwithstanding Section 13340 of the Government Code, ~~35~~ *50* percent of annual proceeds are continuously appropriated, without regard to fiscal years, for transit, affordable housing, and sustainable communities programs as ~~following:~~ *follows:*

(A) ~~Ten~~ *Twenty* percent of the annual proceeds of the fund is hereby continuously appropriated to the Transportation Agency for the Transit and Intercity Rail Capital Program created by Part 2 (commencing with Section 75220) of Division 44 of the Public Resources Code.

(B) ~~Five~~ *Ten* percent of the annual proceeds of the fund is hereby continuously appropriated to the Low Carbon Transit Operations Program created by Part 3 (commencing with Section 75230) of Division 44 of the Public Resources Code. ~~Funds~~ *Moneys* shall be allocated by the Controller, according to requirements of the program, and pursuant to the distribution formula in subdivision

(b) or (c) of Section 99312 of, and Sections 99313 and 99314 of, the Public Utilities Code.

(C) Twenty percent of the annual proceeds of the fund is hereby continuously appropriated to the Strategic Growth Council for the Affordable Housing and Sustainable Communities Program created by Part 1 (commencing with Section 75200) of Division 44 of the Public Resources Code. Of the amount appropriated in this subparagraph, no less than 10 percent of the annual ~~proceeds,~~ *proceeds* shall be expended for affordable housing, consistent with the provisions of that program.

(2) Beginning in the 2015–16 fiscal year, notwithstanding Section 13340 of the Government Code, 25 percent of the annual proceeds of the fund is hereby continuously appropriated to the High-Speed Rail Authority for the following components of the initial operating segment and Phase I Blended System as described in the 2012 business plan adopted pursuant to Section 185033 of the Public Utilities Code:

(A) Acquisition and construction costs of the project.

(B) Environmental review and design costs of the project.

(C) Other capital costs of the project.

(D) Repayment of any loans made to the authority to fund the project.

(c) In determining the amount of annual proceeds of the fund for purposes of the calculation in subdivision (b), the funds subject to Section 39719.1 shall not be included.

SEC. 12. Section 21080.37 of the Public Resources Code is amended to read:

21080.37. (a) This division does not apply to a project or an activity to repair, maintain, or make minor alterations to an existing roadway if all of the following conditions are met:

~~(1) The project is carried out by a city or county with a population of less than 100,000 persons to improve public safety.~~

~~(2)~~

(1) (A) The project does not cross a waterway.

(B) For purposes of this paragraph, "waterway" means a bay, estuary, lake, pond, river, slough, or a perennial, intermittent, or ephemeral stream, lake, or estuarine-marine shoreline.

~~(3)~~

(2) The project involves negligible or no expansion of an existing use beyond that existing at the time of the lead agency's determination.

~~(4) The roadway is not a state roadway.~~

~~(5)~~

(3) (A) The site of the project does not contain wetlands or riparian areas and does not have significant value as a wildlife habitat, and the project does not harm any species protected by the federal Endangered Species Act of 1973 (16 U.S.C. Sec. 1531 et seq.), the Native Plant Protection Act (Chapter 10 (commencing with Section 1900) of Division 2 of the Fish and Game Code), or the California Endangered Species Act (Chapter 1.5 (commencing with Section 2050) of Division 3 of the Fish and Game Code), and the project does not cause the destruction or removal of any species protected by a local ordinance.

(B) For the purposes of this paragraph:

(i) "Riparian areas" mean those areas transitional between terrestrial and aquatic ecosystems and that are distinguished by gradients in biophysical conditions, ecological processes, and biota. A riparian area is an area through which surface and subsurface hydrology connect waterbodies with their adjacent uplands. A riparian area includes those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems. A riparian area is adjacent to perennial, intermittent, and ephemeral streams, lakes, and estuarine-marine shorelines.

(ii) "Significant value as a wildlife habitat" includes wildlife habitat of national, statewide, regional, or local importance; habitat for species protected by the federal Endangered Species Act of 1973 (16 U.S.C. Sec.~~1531,~~ *1531* et seq.), the California Endangered Species Act (Chapter 1.5 (commencing with Section 2050) of Division 3 of the Fish and Game Code), or the Native Plant Protection Act (Chapter 10 (commencing with Section 1900) of Division 2 of the Fish and Game Code); habitat identified as candidate, fully protected, sensitive, or species of special status by local, state, or federal agencies; or habitat essential to the movement of resident or migratory wildlife.

(iii) "Wetlands" has the same meaning as in the United States Fish and Wildlife Service Manual, Part 660 FW 2 (June 21, 1993).

(iv) "Wildlife habitat" means the ecological communities upon which wild animals, birds, plants, fish, amphibians, and invertebrates depend for their conservation and protection.

~~(6)~~

(4) The project does not impact cultural resources.

~~(7)~~

(5) The roadway does not affect scenic resources, as provided pursuant to subdivision (c) of Section 21084.

(b) Prior to determining that a project is exempt pursuant to this section, the lead agency shall do both of the following:

(1) Include measures in the project to mitigate potential vehicular traffic and safety impacts and bicycle and pedestrian safety impacts.

(2) Hold a noticed public hearing on the project to hear and respond to public comments. The hearing on the project may be conducted with another noticed lead agency public hearing. Publication of the notice shall be no fewer times than required by Section 6061 of the Government Code, by the public agency in a newspaper of general circulation in the area.

(c) For purposes of this section, "roadway" means a roadway as defined pursuant to Section 530 of the Vehicle Code and the previously graded and maintained shoulder that is within a roadway right-of-way of no more than five feet from the edge of the roadway.

~~(d) Whenever~~

(d) (1) If a state agency determines that a project is not subject to this division pursuant to this section and it approves or determines to carry out that project, it shall file a notice with the Office of Planning and Research in the manner specified in subdivisions (b) and (c) of Section 21108.

(2) If a local agency determines that a project is not subject to this division pursuant to this ~~section,~~ *section* and it approves or determines to carry out that project, ~~the local agency~~ *it* shall file a notice with the Office of Planning and Research, and with the county clerk in the county in which the project will be located in the manner specified in subdivisions (b) and (c) of Section 21152.

~~(e) This section shall remain in effect only until January 1, 2020, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2020, deletes or extends that date.~~

SEC. 13. Division 13.6 (commencing with Section 21200) is added to the Public Resources Code, to read:

DIVISION 13.6. ADVANCE MITIGATION PROGRAM ACT

Chapter 1. General

21200. This division shall be known, and may be cited, as the Advance Mitigation Program Act.

21201. (a) The purpose of this division is to improve the success and effectiveness of actions implemented to mitigate the natural resource impacts of future transportation projects by establishing the means to implement those actions well before the transportation projects are constructed. The advance identification and implementation of mitigation actions also will streamline the delivery of transportation projects by anticipating mitigation requirements for planned transportation projects and avoiding or reducing delays associated with environmental permitting. By identifying regional or statewide conservation priorities and by anticipating the impacts of planned transportation projects on a regional or statewide basis, mitigation actions can be designed to protect and restore California's most valuable natural resources and also facilitate environmental compliance for planned transportation projects on a regional scale.

(b) This division is not intended to create a new environmental permitting or regulatory program or to modify existing environmental laws or regulations, nor is it expected that all mitigation requirements will be addressed for planned transportation projects. Instead, it is intended to provide a methodology with which to anticipate and fulfill the requirements of existing state and federal environmental laws that protect fish, wildlife, plant species, and other natural resources more efficiently and effectively.

21202. The Legislature finds and declares all of the following:

(a) The minimization and mitigation of environmental impacts is ordinarily handled on a project-by-project basis, usually near the end of a project's timeline and often without guidance regarding regional or statewide conservation priorities.

(b) The cost of critical transportation projects often escalates because of permitting delays that occur when appropriate

conservation and mitigation measures cannot easily be identified and because the cost of these measures often increases between the time a project is planned and funded and the time mitigation is implemented.

(c) Addressing conservation and mitigation needs early in a project's timeline, during the project design and development phase, can reduce costs, allow natural resources conservation to be integrated with project siting and design, and result in the establishment of more valuable and productive habitat mitigation.

(d) When the Department of Transportation is able to anticipate the mitigation needs for planned transportation projects, it can meet those needs in a more timely and cost-effective way by using advance mitigation planning.

(e) Working with state and federal resource protection agencies, the department can identify, conserve, and, where appropriate, restore lands for mitigation of numerous projects early in the projects' timelines, thereby allowing public funds to stretch further by acquiring habitat at a lower cost and avoiding environmental permitting delays.

(f) Advance mitigation can provide an effective means of facilitating delivery of transportation projects while ensuring more effective natural resource conservation.

(g) Advance mitigation is needed to direct mitigation funding for transportation projects to agreed-upon conservation priorities and to the creation of habitat reserves and recreation areas that enhance the sustainability of human and natural systems by protecting or restoring connectivity of natural communities and the delivery of ecosystem services.

(h) Advance mitigation can facilitate the implementation of climate change adaptation strategies both for ecosystems and California's economy.

(i) Advance mitigation can enable the state to protect, restore, and recover its natural resources as it strengthens and improves its transportation systems.

21203. The Legislature intends to do all of the following by enacting this division:

(a) Facilitate delivery of transportation projects while ensuring more effective natural resource conservation.

(b) Develop effective strategies to improve the state's ability to meet mounting demands for transportation improvements and to maximize conservation and other public benefits.

(c) Achieve conservation objectives of statewide and regional importance by coordinating local, state, and federally funded natural resource conservation efforts with mitigation actions required for impacts from transportation projects.

(d) Create administrative, governance, and financial incentives and mechanisms necessary to ensure that measures required to minimize or mitigate impacts from transportation projects will serve to achieve regional or statewide natural resource conservation objectives.

Chapter 2. Definitions

21204. For purposes of this division, the following terms have the following meanings:

(a) "Advance mitigation" means mitigation implemented before, and in anticipation of, environmental effects of planned transportation projects.

(b) "Commission" means the California Transportation Commission.

(c) "Department" means the Department of Transportation.

(d) "Transportation project" means a transportation capital improvement project.

(e) "Planned transportation project" means a transportation project that a transportation agency has concluded is reasonably likely to be constructed within 20 years and that has been identified to the agency for purposes of this division. A planned transportation project may include, but is not limited to, a transportation project that has been proposed for approval or that has been approved.

(f) "Program" means the Advance Mitigation Program implemented pursuant to this division.

(g) "Regulatory agency" means a state or federal natural resource protection agency with regulatory authority over planned transportation projects. A regulatory agency includes, but is not limited to, the Natural Resources Agency, the Department of Fish and Wildlife, California regional water quality control boards, the United States Fish and Wildlife Service, the National Marine

Fisheries Service, the United States Environmental Protection Agency, and the United States Army Corps of Engineers.

Chapter 3. Advance Mitigation Program

21205. (a) The Advance Mitigation Program is hereby created in the department to accelerate project delivery and improve environmental outcomes of environmental mitigation for planned transportation projects.

(b) The program may utilize mitigation instruments, including, but not limited to, mitigation banks, in lieu of fee programs, and conservation easements as defined in Section 815.1 of the Civil Code.

(c) The department shall track all implemented advance mitigation projects to use as credits for environmental mitigation for state-sponsored transportation projects.

(d) The department may use advance mitigation credits to fulfill mitigation requirements of any environmental law for a transportation project eligible for the State Transportation Improvement Program or the State Highway Operation and Protection Program.

21206. No later than August 1, 2017, the department shall establish an interagency transportation advance mitigation steering committee consisting of the department and appropriate state and federal regulatory agencies to support the program so that advance mitigation can be used as required mitigation for planned transportation projects and can provide improved environmental outcomes. The committee shall advise the department of opportunities to carry out advance mitigation projects, provide the best available science, and actively participate in mitigation instrument reviews and approvals. The committee shall seek to develop streamlining opportunities, including those related to landscape scale mitigation planning and alignment of federal and state regulations and procedures related to mitigation requirements and implementation. The committee shall also provide input on crediting, using, and tracking of advance mitigation investments.

21207. The Advance Mitigation Fund is hereby created in the State Transportation Fund as a revolving fund. Notwithstanding Section 13340 of the Government Code, the fund shall be continuously appropriated without regard to fiscal years. The

moneys in the fund shall be programmed by the commission for the planning and implementation of advance mitigation projects consistent with the purposes of this chapter. After the transfer of moneys to the fund for four fiscal years pursuant to subdivision (c) of Section 2032 of the Streets and Highways Code, commencing in the 2017–18 fiscal year, the program is intended to be self-sustaining. Advance expenditures from the fund shall later be reimbursed from project funding available at the time a planned transportation project is constructed. A maximum of 5 percent of available funds may be used for administrative purposes.

21208. The program is intended to improve the efficiency and efficacy of mitigation only and is not intended to supplant the requirements of the California Environmental Quality Act (Division 13 (commencing with Section 21000) or any other environmental law. The identification of planned transportation projects and of mitigation projects or measures for planned transportation projects under this division does not imply or require approval of those projects for purposes of the California Environmental Quality Act (Division 13 (commencing with Section 21000) or any other environmental law.

SEC. 14. Section 99312.1 of the Public Utilities Code is amended to read:

99312.1. *(a)* Revenues transferred to the Public Transportation Account pursuant to Sections 6051.8 and 6201.8 of the Revenue and Taxation Code are hereby continuously appropriated to the Controller for allocation as follows:

~~(a)~~

(1) Fifty percent for allocation to transportation planning agencies, county transportation commissions, and the San Diego Metropolitan Transit Development Board pursuant to Section 99314.

~~(b)~~

(2) Fifty percent for allocation to transportation agencies, county transportation commissions, and the San Diego Metropolitan Transit Development Board for purposes of Section 99313.

(b) For purposes of this chapter, the revenues allocated pursuant to this section shall be subject to the same requirements as revenues allocated pursuant to subdivisions (b) and (c), as applicable, of Section 99312.

(c) The revenues transferred to the Public Transportation Account that are attributable to the increase in the sales and use tax on diesel fuel pursuant to subdivision (b) of Section 6051.8 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, and subdivision (b) of Section 6201.8 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, upon allocation pursuant to Sections 99313 and 99314, shall only be expended on the following:

(1) Transit capital projects or services to maintain or repair a transit operator's existing transit vehicle fleet or existing transit facilities, including rehabilitation or modernization of existing vehicles or facilities.

(2) The design, acquisition, and construction of new vehicles or facilities that improve existing transit services.

(3) Transit services that complement local efforts for repair and improvement of local transportation infrastructure.

(d) (1) Prior to receiving an apportionment of funds pursuant to subdivision (c) from the Controller in a fiscal year, a recipient transit agency shall submit to the Department of Transportation a list of projects proposed to be funded with these funds. The list of projects proposed to be funded with these funds shall include a description and location of each proposed project, a proposed schedule for the project's completion, and the estimated useful life of the improvement. The project list shall not limit the flexibility of a recipient transit agency to fund projects in accordance with local needs and priorities so long as the projects are consistent with subdivision (c).

(2) The department shall report to the Controller the recipient transit agencies that have submitted a list of projects as described in this subdivision and that are therefore eligible to receive an apportionment of funds for the applicable fiscal year. The Controller, upon receipt of the report, shall apportion funds pursuant to Sections 99313 and 99314.

(e) For each fiscal year, each recipient transit agency receiving an apportionment of funds pursuant to subdivision (c) shall, upon expending those funds, submit documentation to the department that includes a description and location of each completed project, the amount of funds expended on the project, the completion date, and the estimated useful life of the improvement.

(f) The audit of transit operator finances required pursuant to Section 99245 shall verify that the revenues identified in subdivision (c) have been expended in conformance with these specific requirements and all other generally applicable requirements.

SEC. 15. Section 99314.9 is added to the Public Utilities Code, to read:

99314.9. The Controller shall compute quarterly proposed allocations for State Transit Assistance funds available for allocation pursuant to Sections 99313 and 99314. The Controller shall publish the allocations for each eligible recipient agency, including one list applicable to revenues allocated pursuant to subdivision (c) of Section 99312.1 and another list for revenues allocated from all other revenues in the Public Transportation Account that are designated for the State Transit Assistance Program.

SEC. 16. Section 6051.8 of the Revenue and Taxation Code is amended to read:

6051.8. (a) Except as provided by Section 6357.3, in addition to the taxes imposed by this part, for the privilege of selling tangible personal property at retail a tax is hereby imposed upon all retailers at the rate of 1.75 percent of the gross receipts of any retailer from the sale of all diesel ~~fuel, as defined in Section 60022, sold at retail in this state on and after the operative date of this subdivision.~~ *fuel.*

(b) Except as provided by Section 6357.3, in addition to the taxes imposed by this part and by subdivision (a), for the privilege of selling tangible personal property at retail a tax is hereby imposed upon all retailers at the rate of 3.5 percent of the gross receipts of any retailer from the sale of all diesel fuel, as defined in Section 60022, sold at retail in this state. The tax imposed under this subdivision shall be imposed on and after the first day of the first calendar quarter that occurs 120 days after the effective date of the act adding this subdivision.

~~(b) Notwithstanding subdivision (a), for~~

(c) Beginning July 1, 2019, and every third year thereafter, the ~~2011–12 fiscal year only,~~ *State Board of Equalization shall recompute* the ~~rate referenced in subdivision (a)~~ *rates of the taxes imposed by this section. That computation* shall be ~~1.87 percent.~~ *made as follows:*

~~(c) Notwithstanding subdivision (a),~~

(1) The Department of Finance shall transmit to the State Board of Equalization the percentage change in the California Consumer Price Index for *all items from November of three calendar years prior to November of* the ~~2012–13 fiscal year only, the rate referenced in subdivision (a) shall be 2.17 percent.~~ *prior calendar year, no later than January 31, 2019, and January 31 of every third year thereafter.*

~~(d) Notwithstanding subdivision (a), for~~

(2) The State Board of Equalization shall do all of the following:

(A) Compute an inflation adjustment factor by adding 100 percent to the percentage change figure that is furnished pursuant to paragraph (1) and dividing the result by 100.

(B) Multiply the preceding tax rate per gallon by the inflation adjustment factor determined in subparagraph (A) and round off the resulting product to the nearest tenth of a cent.

(C) Make its determination of the ~~2013–14 fiscal year only,~~ *new rate no later than March 1 of* the ~~rate referenced in subdivision (a) shall be 1.94 percent.~~ *same year as the effective date of the new rate.*

~~(e)~~

(d) Notwithstanding subdivision (b) of Section 7102, all of the revenues, less refunds, collected pursuant to this section shall be estimated by the State Board of Equalization, with the concurrence of the Department of Finance, and transferred quarterly to the Public Transportation Account in the State Transportation Fund for allocation pursuant to Section 99312.1 of the Public Utilities Code.

~~(f) Subdivisions (a) to (e), inclusive, shall become operative on July 1, 2011.~~

SEC. 17. Section 6201.8 of the Revenue and Taxation Code is amended to read:

6201.8. (a) Except as provided by Section 6357.3, in addition to the taxes imposed by this part, an excise tax is hereby imposed on the storage, use, or other consumption in this state of diesel fuel, as defined in Section 60022, at the rate of 1.75 percent of the sales price of the diesel ~~fuel on and after the operative date of this subdivision.~~ *fuel.*

~~(b) Notwithstanding subdivision (a), for~~

(b) Except as provided by Section 6357.3, in addition to the taxes imposed by this part and by subdivision (a), an excise tax is hereby imposed on the storage, use, or other consumption in this state of diesel fuel, as defined in Section 60022, at the rate of 3.5 percent of the sales price of the diesel fuel. The tax imposed under this subdivision shall be imposed on and after the first day of the first calendar quarter that occurs 120 days after the effective date of the act adding this subdivision.

(c) Beginning July 1, 2019, and every third year thereafter, the ~~2011–12 fiscal year only,~~ *State Board of Equalization shall recompute* the ~~rate referenced in subdivision (a)~~ *rates of the taxes imposed by this section. That computation* shall be ~~1.87 percent.~~ *made as follows:*

~~(c) Notwithstanding subdivision (a),~~

(1) The Department of Finance shall transmit to the State Board of Equalization the percentage change in the California Consumer Price Index for *all items from November of three calendar years prior to November of* the ~~2012–13 fiscal year only, the rate referenced in subdivision (a) shall be 2.17 percent.~~ *prior calendar year, no later than January 31, 2019, and January 31 of every third year thereafter.*

~~(d) Notwithstanding subdivision (a), for~~

(2) The State Board of Equalization shall do all of the following:

(A) Compute an inflation adjustment factor by adding 100 percent to the percentage change figure that is furnished pursuant to paragraph (1) and dividing the result by 100.

(B) Multiply the preceding tax rate per gallon by the inflation adjustment factor determined in subparagraph (A) and round off the resulting product to the nearest tenth of a cent.

(C) Make its determination of the ~~2013–14 fiscal year only,~~ *new rate no later than March 1 of* the ~~rate referenced in subdivision (a) shall be 1.94 percent.~~ *same year as the effective date of the new rate.*

~~(e)~~

(d) Notwithstanding subdivision (b) of Section 7102, all of the revenues, less refunds, collected pursuant to this section shall be estimated by the State Board of Equalization, with the concurrence of the Department of Finance, and transferred quarterly to the Public Transportation Account in the State Transportation Fund

for allocation pursuant to Section 99312.1 of the Public Utilities Code.

~~(f) Subdivisions (a) to (e), inclusive, shall become operative on July 1, 2011.~~

SEC. 18. Section 7360 of the Revenue and Taxation Code is amended to read:

7360. (a) (1) *(A)* A tax of eighteen cents ($0.18) is hereby imposed upon each gallon of fuel subject to the tax in Sections 7362, 7363, and 7364.

(B) In addition to the tax imposed pursuant to subparagraph (A), on and after the first day of the first calendar quarter that occurs 90 days after the effective date of the act adding this subparagraph, a tax of twelve cents ($0.12) is hereby imposed upon each gallon of fuel, other than aviation gasoline, subject to the tax in Sections 7362, 7363, and 7364.

(2) If the federal fuel tax is reduced below the rate of nine cents ($0.09) per gallon and federal financial allocations to this state for highway and exclusive public mass transit guideway purposes are reduced or eliminated correspondingly, the tax rate imposed by *subparagraph (A) of* paragraph (1), on and after the date of the reduction, shall be recalculated by an amount so that the combined state rate under *subparagraph (A) of* paragraph (1) and the federal tax rate per gallon equal twenty-seven cents ($0.27).

(3) If any person or entity is exempt or partially exempt from the federal fuel tax at the time of a reduction, the person or entity shall continue to be so exempt under this section.

(b) ~~(1)~~ On and after July 1, 2010, in addition to the tax imposed by subdivision (a), a tax is hereby imposed upon each gallon of motor vehicle fuel, other than aviation gasoline, subject to the tax in Sections 7362, 7363, and 7364 in an amount equal to seventeen and three-tenths cents ($0.173) per gallon.

~~(2) For the 2011–12 fiscal year~~

(c) Beginning July 1, 2019, and ~~each fiscal~~ *every third* year thereafter, the ~~board shall, on or before March 1~~ *State Board* of ~~the fiscal year immediately preceding the applicable fiscal year, adjust the rate in paragraph (1) in that manner as to generate an amount~~ *Equalization shall recompute the rates* of ~~revenue that will equal~~ the ~~amount of revenue loss attributable to the exemption provided~~ *taxes imposed* by ~~Section 6357.7, based on estimates made by the board, and that rate~~ *this section. That computation*

shall be ~~effective during the state's next fiscal year.~~ *made as follows:*

~~(3) In order to maintain revenue neutrality for each year, beginning with~~

(1) The Department of Finance shall transmit to the State Board of Equalization the percentage change in the California Consumer Price Index for all items from November of three calendar years prior to November of the prior calendar year, no later than January 31, 2019, and January 31 of every third year thereafter.

(2) The State Board of Equalization shall do all of the following:

(A) Compute an inflation adjustment factor by adding 100 percent to the percentage change figure that is furnished pursuant to paragraph (1) and dividing the result by 100.

(B) Multiply the *preceding tax* rate ~~adjustment on or before March 1, 2012, the adjustment under paragraph (2) shall also take into account the extent to which the actual amount of revenues derived pursuant to this subdivision and, as applicable, Section 7361.1, the revenue loss attributable to the exemption provided~~ *per gallon* by ~~Section 6357.7 resulted~~ *the inflation adjustment factor determined* in ~~a net revenue gain or loss for~~ *subparagraph (A) and round off* the ~~fiscal year ending prior~~ *resulting product* to the ~~rate adjustment date on or before March 1.~~ *nearest tenth of a cent.*

~~(4) The intent~~

(C) Make its determination of ~~paragraphs (2) and (3) is to ensure that~~ the ~~act adding this subdivision and Section 6357.7 does not produce a net revenue gain in state taxes.~~ *new rate no later than March 1 of the same year as the effective date of the new rate.*

SEC. 19. Section 8352.4 of the Revenue and Taxation Code is amended to read:

8352.4. (a) Subject to Sections 8352 and 8352.1, and except as otherwise provided in subdivision (b), there shall be transferred from the money deposited to the credit of the Motor Vehicle Fuel Account to the Harbors and Watercraft Revolving Fund, for expenditure in accordance with Division 1 (commencing with Section 30) of the Harbors and Navigation Code, the sum of six million six hundred thousand dollars ($6,600,000) per annum, representing the amount of money in the Motor Vehicle Fuel Account attributable to taxes imposed on distributions of motor vehicle fuel used or usable in propelling vessels. The actual amount

shall be calculated using the annual reports of registered boats prepared by the Department of Motor Vehicles for the United States Coast Guard and the formula and method of the December 1972 report prepared for this purpose and submitted to the Legislature on December 26, 1972, by the Director of Transportation. If the amount transferred during each fiscal year is in excess of the calculated amount, the excess shall be retransferred from the Harbors and Watercraft Revolving Fund to the Motor Vehicle Fuel Account. If the amount transferred is less than the amount calculated, the difference shall be transferred from the Motor Vehicle Fuel Account to the Harbors and Watercraft Revolving Fund. No adjustment shall be made if the computed difference is less than fifty thousand dollars ($50,000), and the amount shall be adjusted to reflect any temporary or permanent increase or decrease that may be made in the rate under the Motor Vehicle Fuel Tax Law. Payments pursuant to this section shall be made prior to payments pursuant to Section 8352.2.

(b) Commencing July 1, ~~2012,~~ *2017,* the revenues attributable to the taxes imposed pursuant to subdivision (b) of Section 7360 and Section 7361.1 and otherwise to be deposited in the Harbors and Watercraft Revolving Fund pursuant to subdivision (a) shall instead be transferred to the ~~General Fund. The revenues attributable to the taxes imposed~~ *Highway Users Tax Account for distribution* pursuant to ~~subdivision (b) of~~ Section ~~7360 and Section 7361.1 that were deposited in~~ *2103.1 of* the ~~Harbors~~ *Streets* and ~~Watercraft Revolving Fund in the 2010–11 and 2011–12 fiscal years shall be transferred to the General Fund.~~ *Highways Code.*

SEC. 20. Section 8352.5 of the Revenue and Taxation Code is amended to read:

8352.5. (a) (1) Subject to Sections 8352 and 8352.1, and except as otherwise provided in subdivision (b), there shall be transferred from the money deposited to the credit of the Motor Vehicle Fuel Account to the Department of Food and Agriculture Fund, during the second quarter of each fiscal year, an amount equal to the estimate contained in the most recent report prepared pursuant to this section.

(2) The amounts are not subject to Section 6357 with respect to the collection of sales and use taxes thereon, and represent the portion of receipts in the Motor Vehicle Fuel Account during a calendar year that were attributable to agricultural off-highway

use of motor vehicle fuel which is subject to refund pursuant to Section 8101, less gross refunds allowed by the Controller during the fiscal year ending June ~~30th~~ *30* following the calendar year to persons entitled to refunds for agricultural off-highway use pursuant to Section 8101. Payments pursuant to this section shall be made prior to payments pursuant to Section 8352.2.

(b) Commencing July 1, ~~2012,~~ *2017,* the revenues attributable to the taxes imposed pursuant to subdivision (b) of Section 7360 and Section 7361.1 and otherwise to be deposited in the Department of Food and Agriculture Fund pursuant to subdivision (a) shall instead be transferred to the ~~General Fund. The revenues attributable to the taxes imposed~~ *Highway Users Tax Account for distribution* pursuant to ~~subdivision (b) of~~ Section ~~7360 and Section 7361.1 that were deposited in the Department~~ *2103.1* of ~~Food and Agriculture Fund in~~ the ~~2010–11~~ *Streets* and ~~2011–12 fiscal years shall be transferred to the General Fund.~~ *Highways Code.*

(c) On or before September 30, 2012, and on or before September 30 of each even-numbered year thereafter, the Director of Transportation and the Director of Food and Agriculture shall jointly prepare, or cause to be prepared, a report setting forth the current estimate of the amount of money in the Motor Vehicle Fuel Account attributable to agricultural off-highway use of motor vehicle fuel, which is subject to refund pursuant to Section 8101 less gross refunds allowed by the Controller to persons entitled to refunds for agricultural off-highway use pursuant to Section 8101; and they shall submit a copy of the report to the Legislature.

SEC. 21. Section 8352.6 of the Revenue and Taxation Code is amended to read:

8352.6. (a) (1) Subject to Section 8352.1, and except as otherwise provided in paragraphs (2) and (3), on the first day of every month, there shall be transferred from moneys deposited to the credit of the Motor Vehicle Fuel Account to the Off-Highway Vehicle Trust Fund created by Section 38225 of the Vehicle Code an amount attributable to taxes imposed upon distributions of motor vehicle fuel used in the operation of motor vehicles off highway and for which a refund has not been claimed. Transfers made pursuant to this section shall be made prior to transfers pursuant to Section 8352.2.

(2) Commencing July 1, ~~2012,~~ *2017,* the revenues attributable to the taxes imposed pursuant to subdivision (b) of Section 7360

and Section 7361.1 and otherwise to be deposited in the Off-Highway Vehicle Trust Fund pursuant to paragraph (1) shall instead be transferred to the ~~General Fund. The revenues attributable to the taxes imposed~~ *Highway Users Tax Account for distribution* pursuant to ~~subdivision (b) of~~ Section ~~7360 and Section 7361.1 that were deposited in~~ *2103.1 of* the ~~Off-Highway Vehicle Trust Fund in the 2010–11~~ *Streets* and ~~2011–12 fiscal years shall be transferred to the General Fund.~~ *Highways Code.*

(3) The Controller shall withhold eight hundred thirty-three thousand dollars ($833,000) from the monthly transfer to the Off-Highway Vehicle Trust Fund pursuant to paragraph (1), and transfer that amount to the General Fund.

(b) The amount transferred to the Off-Highway Vehicle Trust Fund pursuant to paragraph (1) of subdivision (a), as a percentage of the Motor Vehicle Fuel Account, shall be equal to the percentage transferred in the 2006–07 fiscal year. Every five years, starting in the 2013–14 fiscal year, the percentage transferred may be adjusted by the Department of Transportation in cooperation with the Department of Parks and Recreation and the Department of Motor Vehicles. Adjustments shall be based on, but not limited to, the changes in the following factors since the 2006–07 fiscal year or the last adjustment, whichever is more recent:

(1) The number of vehicles registered as off-highway motor vehicles as required by Division 16.5 (commencing with Section 38000) of the Vehicle Code.

(2) The number of registered street-legal vehicles that are anticipated to be used off highway, including four-wheel drive vehicles, all-wheel drive vehicles, and dual-sport motorcycles.

(3) Attendance at the state vehicular recreation areas.

(4) Off-highway recreation use on federal lands as indicated by the United States Forest Service's National Visitor Use Monitoring and the United States Bureau of Land Management's Recreation Management Information System.

(c) It is the intent of the Legislature that transfers from the Motor Vehicle Fuel Account to the Off-Highway Vehicle Trust Fund should reflect the full range of motorized vehicle use off highway for both motorized recreation and motorized off-road access to other recreation opportunities. Therefore, the Legislature finds that the fuel tax baseline established in subdivision (b), attributable to off-highway estimates of use as of the 2006–07 fiscal year,

accounts for the three categories of vehicles that have been found over the years to be users of fuel for off-highway motorized recreation or motorized access to nonmotorized recreational pursuits. These three categories are registered off-highway motorized vehicles, registered street-legal motorized vehicles used off highway, and unregistered off-highway motorized vehicles.

(d) It is the intent of the Legislature that the off-highway motor vehicle recreational use to be determined by the Department of Transportation pursuant to paragraph (2) of subdivision (b) be that usage by vehicles subject to registration under Division 3 (commencing with Section 4000) of the Vehicle Code, for recreation or the pursuit of recreation on surfaces where the use of vehicles registered under Division 16.5 (commencing with Section 38000) of the Vehicle Code may occur.

(e) In the 2014–15 fiscal year, the Department of Transportation, in consultation with the Department of Parks and Recreation and the Department of Motor Vehicles, shall undertake a study to determine the appropriate adjustment to the amount transferred pursuant to subdivision (b) and to update the estimate of the amount attributable to taxes imposed upon distributions of motor vehicle fuel used in the operation of motor vehicles off highway and for which a refund has not been claimed. The department shall provide a copy of this study to the Legislature no later than January 1, 2016.

SEC. 22. Section 60050 of the Revenue and Taxation Code is amended to read:

60050. (a) (1) A tax of ~~eighteen~~ *thirteen* cents ~~($0.18)~~ *($0.13)* is hereby imposed upon each gallon of diesel fuel subject to the tax in Sections 60051, 60052, and 60058.

(2) If the federal fuel tax is reduced below the rate of fifteen cents ($0.15) per gallon and federal financial allocations to this state for highway and exclusive public mass transit guideway purposes are reduced or eliminated correspondingly, the tax rate imposed by paragraph ~~(1), including any reduction or adjustment pursuant to subdivision (b), on and after the date of the reduction,~~ *(1)* shall be increased by an amount so that the combined state rate under paragraph (1) and the federal tax rate per gallon equal what it would have been in the absence of the federal reduction.

(3) If any person or entity is exempt or partially exempt from the federal fuel tax at the time of a reduction, the person or entity shall continue to be exempt under this section.

~~(b) (1) On July 1, 2011, the tax rate specified in paragraph (1) of subdivision (a) shall be reduced to thirteen cents ($0.13) and every July 1 thereafter shall be adjusted pursuant to paragraphs (2) and (3).~~

~~(2) For the 2012–13 fiscal year and each fiscal year thereafter, the board shall, on or before March 1 of the fiscal year immediately preceding the applicable fiscal year, adjust the rate reduction in paragraph (1) in that manner as to result in a revenue loss attributable to paragraph (1) that will equal the amount of revenue gain attributable to Sections 6051.8 and 6201.8, based on estimates made by the board, and that rate shall be effective during the state's next fiscal year.~~

~~(3) In order to maintain revenue neutrality for each year, beginning with the rate adjustment on or before March 1, 2013, the adjustment under paragraph (2) shall take into account the extent to which the actual amount of revenues derived pursuant to Sections 6051.8 and 6201.8 and the revenue loss attributable to this subdivision resulted in a net revenue gain or loss for the fiscal year ending prior to the rate adjustment date on or before March 1.~~

~~(4) The intent of paragraphs (2) and (3) is to ensure that the act adding this subdivision and Sections 6051.8 and 6201.8 does not produce a net revenue gain in state taxes.~~

(b) In addition to the tax imposed pursuant to subdivision (a), on and after the first day of the first calendar quarter that occurs 120 days after the effective date of the act amending this subdivision in the 2017–18 Regular Session, an additional tax of twenty cents ($0.20) is hereby imposed upon each gallon of diesel fuel subject to the tax in Sections 60051, 60052, and 60058.

(c) Beginning July 1, 2019, and every third year thereafter, the State Board of Equalization shall recompute the rates of the taxes imposed by this section. That computation shall be made as follows:

(1) The Department of Finance shall transmit to the State Board of Equalization the percentage change in the California Consumer Price Index for all items from November of three calendar years

prior to November of the prior calendar year, no later than January 31, 2019, and January 31 of every third year thereafter.

(2) The State Board of Equalization shall do all of the following:

(A) Compute an inflation adjustment factor by adding 100 percent to the percentage change figure that is furnished pursuant to paragraph (1) and dividing the result by 100.

(B) Multiply the preceding tax rate per gallon by the inflation adjustment factor determined in subparagraph (A) and round off the resulting product to the nearest tenth of a cent.

(C) Make its determination of the new rate no later than March 1 of the same year as the effective date of the new rate.

SEC. 23. Section 183.1 of the Streets and Highways Code is amended to read:

183.1. ~~(a) Notwithstanding subdivision (a) of~~ *Except as otherwise provided in* Section ~~182 or any other provision~~ *54237.7* of ~~law,~~ *the Government Code,* money deposited into the account that is not subject to Article XIX of the California Constitution, including, but not limited to, money that is derived from the sale of documents, charges for miscellaneous services to the public, condemnation deposits fund investments, rental of state property, or any other miscellaneous uses of property or money, ~~may~~ *shall* be ~~used for any transportation purpose authorized by statute, upon appropriation by~~ *deposited in* the ~~Legislature or, after transfer~~ *Road Maintenance and Rehabilitation Account created pursuant* to ~~another fund, upon appropriation by the Legislature from that fund.~~ *Section 2031.*

~~(b) Commencing with the 2013–14 fiscal year, and not later than November 1 of each fiscal year thereafter, based on prior year financial statements, the Controller shall transfer the funds identified in subdivision (a) for the prior fiscal year from the State Highway Account to the Transportation Debt Service Fund in the State Transportation Fund, and those funds are continuously appropriated for the purposes specified for the Transportation Debt Service Fund.~~

SEC. 24. Section 820.1 is added to the Streets and Highways Code, to read:

820.1. (a) The State of California consents to the jurisdiction of the federal courts with regard to the compliance, discharge, or enforcement of the responsibilities assumed by the department

pursuant to Sections 326 and 327(a) of Title 23 of the United States Code.

(b) In any action brought pursuant to the federal laws described in subdivision (a), no immunity from suit may be asserted by the department pursuant to the Eleventh Amendment to the United States Constitution, and any immunity is hereby waived.

(c) The department shall not delegate any of its responsibilities assumed pursuant to the federal laws described in subdivision (a) to any political subdivision of the state or its instrumentalities.

(d) Nothing in this section affects the obligation of the department to comply with state and federal law.

SEC. 25. Chapter 2 (commencing with Section 2030) is added to Division 3 of the Streets and Highways Code, to read:

Chapter 2. Road Maintenance and Rehabilitation Program

2030. (a) The Road Maintenance and Rehabilitation Program is hereby created to address deferred maintenance on the state highway system and the local street and road system. Funds made available by the program shall be prioritized for expenditure on basic road maintenance and road rehabilitation projects, and on critical safety projects. For funds appropriated pursuant to paragraph (1) of subdivision (d) of Section 2032, the California Transportation Commission shall adopt performance criteria, consistent with the asset management plan required pursuant to 14526.4 of the Government Code, to ensure efficient use of the funds available for these purposes in the program.

(b) (1) Funds made available by the program shall be used for projects that include, but are not limited to, the following:

(A) Road maintenance and rehabilitation.

(B) Safety projects.

(C) Railroad grade separations.

(D) Complete street components, including active transportation purposes, pedestrian and bicycle safety projects, transit facilities, and drainage and stormwater capture projects in conjunction with any other allowable project.

(E) Traffic control devices.

(2) Funds made available by the program may also be used to satisfy a match requirement in order to obtain state or federal funds for projects authorized by this subdivision.

2031. The following revenues shall be deposited in the Road Maintenance and Rehabilitation Account, which is hereby created in the State Transportation Fund:

(a) The portion of the revenues in the Highway Users Tax Account attributable to the increase in the motor vehicle fuel excise tax pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 7360 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section.

(b) The revenues from the increase in the vehicle registration fee pursuant to Section 9250.3 of the Vehicle Code, as adjusted pursuant to subdivision (b) of that section.

(c) The revenues from the increase in the vehicle registration fee pursuant to Section 9250.6 of the Vehicle Code, as adjusted pursuant to subdivision (b) of that section.

(d) The revenues deposited in the account pursuant to Section 183.1 of the Streets and Highways Code.

(e) Any other revenues designated for the program.

2031.5. Each fiscal year the annual Budget Act shall contain an appropriation from the Road Maintenance and Rehabilitation Account to the Controller for the costs of carrying out his or her duties pursuant to this chapter and to the California Transportation Commission for the costs of carrying out its duties pursuant to this chapter and Section 14526.7 of the Government Code.

2032. (a) (1) After deducting the amounts appropriated in the annual Budget Act, as provided in Section 2031.5, two hundred million dollars ($200,000,000) of the remaining revenues deposited in the Road Maintenance and Rehabilitation Account shall be set aside annually for counties that have sought and received voter approval of taxes or that have imposed fees, including uniform developer fees as defined by subdivision (b) of Section 8879.67 of the Government Code, which taxes or fees are dedicated solely to transportation improvements. The Controller shall each month set aside one-twelfth of this amount, to accumulate a total of two hundred million dollars ($200,000,000) in each fiscal year.

(2) Notwithstanding Section 13340 of the Government Code, the funds available under this subdivision in each fiscal year are hereby continuously appropriated for allocation to each eligible

county and each city in the county for road maintenance and rehabilitation purposes pursuant to Section 2033.

(b) (1) After deducting the amounts appropriated in the annual Budget Act pursuant to Section 2031.5 and the amount allocated in subdivision (a), beginning in the 2017–18 fiscal year, eighty million dollars ($80,000,000) of the remaining revenues shall be transferred annually to the State Highway Account for expenditure, upon appropriation by the Legislature, on the Active Transportation Program created pursuant to Chapter 8 (commencing with Section 2380) of Division 3 to be allocated by the California Transportation Commission pursuant to Section 2381.

(2) In addition to the funds transferred in paragraph (1), the department shall annually identify savings achieved through efficiencies implemented at the department. The department, through the annual budget process, shall propose, from the identified savings, an appropriation to be included in the annual Budget Act of up to seventy million dollars ($70,000,000), but not to exceed the total annual identified savings, from the State Highway Account for expenditure on the Active Transportation Program.

(c) After deducting the amounts appropriated in the annual Budget Act pursuant to Section 2031.5, the amount allocated in subdivision (a) and the amount transferred in paragraph (1) of subdivision (b), in the 2017–18, 2018–19, 2019–20, and 2020–21 fiscal years, the sum of thirty million dollars ($30,000,000) in each fiscal year from the remaining revenues shall be transferred to the Advance Mitigation Fund in the State Transportation Fund created pursuant to Section 21207 of the Public Resources Code.

(d) After deducting the amounts appropriated in the annual Budget Act pursuant to Section 2031.5, the amount allocated in subdivision (a), and the amounts transferred in paragraph (1) of subdivision (b) and in subdivision (c), beginning in the 2017–18 fiscal year and each fiscal year thereafter, and notwithstanding Section 13340 of the Government Code, there is hereby continuously appropriated to the California State University the sum of two million dollars ($2,000,000) from the remaining revenues for the purpose of conducting transportation research and transportation-related workforce education, training, and development, and to the institutes for transportation studies at the University of California the sum of three million dollars

($3,000,000). Prior to the start of each fiscal year, the chairs of the Assembly Committee on Transportation and the Senate Committee on Transportation and Housing shall confer and set out a recommended priority list of research components to be addressed in the upcoming fiscal year.

(e) Notwithstanding Section 13340 of the Government Code, the balance of the revenues deposited in the Road Maintenance and Rehabilitation Account are hereby continuously appropriated as follows:

(1) Fifty percent for allocation to the department for maintenance of the state highway system or for purposes of the state highway operation and protection program.

(2) Fifty percent for apportionment to cities and counties by the Controller pursuant to the formula in clauses (i) and (ii) of subparagraph (C) of paragraph (3) of subdivision (a) of Section 2103 for the purposes authorized by this chapter.

2033. (a) On or before July 1, 2017, the commission, in cooperation with the department, transportation planning agencies, county transportation commissions, and other local agencies, shall develop guidelines for the allocation of funds pursuant to subdivision (a) of Section 2032.

(b) The guidelines shall be the complete and full statement of the policy, standards, and criteria that the commission intends to use to determine how these funds will be allocated.

(c) The commission may amend the adopted guidelines after conducting at least one public hearing.

2034. (a) (1) Prior to receiving an apportionment of funds under the program pursuant to paragraph (2) of subdivision (e) of Section 2032 from the Controller in a fiscal year, an eligible city or county shall submit to the commission a list of projects proposed to be funded with these funds pursuant to an adopted city or county budget. All projects proposed to receive funding shall be included in a city or county budget that is adopted by the applicable city council or county board of supervisors at a regular public meeting. The list of projects proposed to be funded with these funds shall include a description and the location of each proposed project, a proposed schedule for the project's completion, and the estimated useful life of the improvement. The project list shall not limit the flexibility of an eligible city or county to fund projects in

accordance with local needs and priorities so long as the projects are consistent with subdivision (b) of Section 2030.

(2) The commission shall report to the Controller the cities and counties that have submitted a list of projects as described in this subdivision and that are therefore eligible to receive an apportionment of funds under the program for the applicable fiscal year. The Controller, upon receipt of the report, shall apportion funds to eligible cities and counties.

(b) For each fiscal year, each city or county receiving an apportionment of funds shall, upon expending program funds, submit documentation to the commission that includes a description and location of each completed project, the amount of funds expended on the project, the completion date, and the estimated useful life of the improvement.

2036. (a) Cities and counties shall maintain their existing commitment of local funds for street, road, and highway purposes in order to remain eligible for an allocation or apportionment of funds pursuant to Section 2032.

(b) In order to receive an allocation or apportionment pursuant to Section 2032, the city or county shall annually expend from its general fund for street, road, and highway purposes an amount not less than the annual average of its expenditures from its general fund during the 2009–10, 2010–11, and 2011–12 fiscal years, as reported to the Controller pursuant to Section 2151. For purposes of this subdivision, in calculating a city's or county's annual general fund expenditures and its average general fund expenditures for the 2009–10, 2010–11, and 2011–12 fiscal years, any unrestricted funds that the city or county may expend at its discretion, including vehicle in-lieu tax revenues and revenues from fines and forfeitures, expended for street, road, and highway purposes shall be considered expenditures from the general fund. One-time allocations that have been expended for street and highway purposes, but which may not be available on an ongoing basis, including revenue provided under the Teeter Plan Bond Law of 1994 (Chapter 6.6 (commencing with Section 54773) of Part 1 of Division 2 of Title 5 of the Government Code), may not be considered when calculating a city's or county's annual general fund expenditures.

(c) For any city incorporated after July 1, 2009, the Controller shall calculate an annual average expenditure for the period

between July 1, 2009, and December 31, 2015, inclusive, that the city was incorporated.

(d) For purposes of subdivision (b), the Controller may request fiscal data from cities and counties in addition to data provided pursuant to Section 2151, for the 2009–10, 2010–11, and 2011–12 fiscal years. Each city and county shall furnish the data to the Controller not later than 120 days after receiving the request. The Controller may withhold payment to cities and counties that do not comply with the request for information or that provide incomplete data.

(e) The Controller may perform audits to ensure compliance with subdivision (b) when deemed necessary. Any city or county that has not complied with subdivision (b) shall reimburse the state for the funds it received during that fiscal year. Any funds withheld or returned as a result of a failure to comply with subdivision (b) shall be reapportioned to the other cities and counties whose expenditures are in compliance.

(f) If a city or county fails to comply with the requirements of subdivision (b) in a particular fiscal year, the city or county may expend during that fiscal year and the following fiscal year a total amount that is not less than the total amount required to be expended for those fiscal years for purposes of complying with subdivision (b).

2037. A city or county may spend its apportionment of funds under the program on transportation priorities other than those allowable pursuant to this chapter if the city's or county's average Pavement Condition Index meets or exceeds 80.

2038. (a) The department and local agencies, as a condition of receiving funds from the program, shall adopt and implement a program designed to promote and advance construction employment and training opportunities through preapprenticeship opportunities, either by the public agency itself or through contractors engaged by the public agencies to do work funded in whole or in part by funds made available by the program.

(b) The department and local agencies, as a condition of receiving funds from the program, shall ensure the involvement of the California Conservation Corps and certified community conservation corps in the delivery of projects and services funded in whole or in part by funds made available by the program.

SEC. 26. Section 2103.1 is added to the Streets and Highways Code, to read:

2103.1. (a) Notwithstanding Section 2103, the revenues transferred to the Highway Users Tax Account pursuant to Sections 8352.4, 8352.5, and 8352.6 of the Revenue and Taxation Code shall be distributed pursuant to the formula in paragraph (3) of subdivision (a) of Section 2103.

(b) Notwithstanding subdivision (b) of Section 2103, the portion of revenues in the Highway Users Tax Account attributable to the increase in the motor vehicle fuel excise tax pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 7360 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, shall be transferred to the Road Maintenance and Rehabilitation Account pursuant to Section 2031.

(c) Notwithstanding subdivision (b) of Section 2103, the portion of revenues in the Highway Users Tax Account attributable to the increase in the diesel fuel excise tax pursuant to subdivision (b) of Section 60050 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, shall be transferred to the Trade Corridors Improvement Fund pursuant to Section 2192.4.

SEC. 27. Section 2192 of the Streets and Highways Code is amended to read:

2192. (a) *(1)* The Trade Corridors Improvement Fund, created pursuant to subdivision (c) of Section 8879.23 of the Government Code, is hereby continued in existence to receive revenues from *state* sources other than the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006. ~~This chapter shall govern expenditure of those other revenues.~~

(2) Revenues apportioned to the state under Section 167 of Title 23 of the United States Code from the national highway freight program, pursuant to the federal Fixing America's Surface Transportation Act ("FAST Act," Public Law 114-94) shall be allocated for projects approved pursuant to this chapter.

(b) This chapter shall govern the expenditure of those state and federal revenues described in subdivision (a).

~~(b)~~

(c) The ~~moneys~~ *funding described* in ~~the fund from those other sources~~ *subdivision (a)* shall be available upon appropriation for allocation by the California Transportation Commission for infrastructure improvements in this state on federally designated

Trade Corridors of National and Regional Significance, on the Primary Freight Network, and along other corridors that have a high volume of freight movement, as determined by the commission. In determining the projects eligible for funding, the commission shall consult the Transportation Agency's state freight plan as described in Section 13978.8 of the Government ~~Code, the State Air Resources Board's Sustainable Freight Strategy adopted by Resolution 14-2,~~ *Code* and the ~~trade infrastructure and goods movement plan submitted to the commission by the Secretary of Transportation and the Secretary for Environmental Protection.~~ *California Sustainable Freight Action Plan released in July 2016 pursuant to Executive Order B-32-15.* The commission shall also consult trade infrastructure and goods movement plans adopted by regional transportation planning agencies, adopted regional transportation plans required by state and federal law, and the ~~statewide~~ *applicable* port master plan ~~prepared by the California Marine and Intermodal Transportation System Advisory Council (Cal-MITSAC) pursuant to Section 1730 of the Harbors and Navigation Code,~~ when determining eligible projects for funding. Eligible projects for ~~these funds~~ *funding described in subdivision (a) shall further the state's economic, environmental, and public health objectives and goals for freight policy, as articulated in the plans to be consulted pursuant to this subdivision, and may* include, but are not limited to, all of the following:

(1) Highway capacity *improvements, rail landside access improvements, landside freight access* improvements *to airports,* and operational improvements to more efficiently accommodate the movement of freight, particularly for ingress and egress to and from the state's land ports of ~~entry~~ *entry, rail terminals,* and seaports, including navigable inland waterways used to transport freight between seaports, land ports of entry, and airports, and to relieve traffic congestion along major trade or goods movement corridors.

(2) Freight rail system improvements to enhance the ability to move goods from seaports, land ports of entry, and airports to warehousing and distribution centers throughout California, including projects that separate rail lines from highway or local road traffic, improve freight rail mobility through mountainous regions, relocate rail switching yards, and other projects that improve the efficiency and capacity of the rail freight system.

(3) Projects to enhance the capacity and efficiency of ports.

(4) Truck corridor *and capital and operational* improvements, including dedicated truck facilities or truck toll facilities.

(5) Border ~~access~~ *capital and operational* improvements that enhance goods movement between California and Mexico and that maximize the state's ability to access ~~coordinated border infrastructure~~ funds made available to the state by federal law.

(6) Surface transportation and connector road improvements to effectively facilitate the movement of goods, particularly for ingress and egress to and from the state's land ports of entry, airports, and seaports, to relieve traffic congestion along major trade or goods movement corridors.

~~(c)~~

(d) (1) ~~The~~ *In selecting projects for inclusion in the program of projects to be funded with funds described in subdivision (a), the* commission shall ~~allocate funds for trade infrastructure improvements from the fund~~ *evaluate the total potential costs and total potential economic and noneconomic benefits of the program to California's economy, environment, and public health. The commission shall consult with the State Air Resources Board in order to utilize the appropriate models, techniques, and methods to develop the parameters for evaluation of projects. The commission shall allocate the funding described in subdivision (a) for trade infrastructure improvements* consistent with Section 8879.52 of the Government Code and the Trade Corridors Improvement Fund (TCIF) Guidelines adopted by the commission on November 27, 2007, or as amended by the commission, and in a manner that (A) addresses the state's most urgent needs, (B) balances the demands of various land ports of entry, seaports, and airports, (C) provides reasonable geographic balance between the state's regions, ~~and~~ (D) places emphasis on projects that improve trade corridor mobility *and safety* while reducing emissions of diesel ~~particulate~~ *particulates, greenhouse gases,* and other ~~pollutant emissions.~~ *pollutants, and reducing other negative community impacts, and (E) makes a significant contribution to the state's economy.*

(2) In adopting amended guidelines, and developing and adopting the program of projects, the commission shall do all of the following:

(A) Accept nominations for projects to be included in the program of projects from regional and local transportation agencies and the Department of Transportation.

(B) Recognize the key role of the state in project identification and support integrating statewide goods movement priorities into the corridor approach.

(C) Make a finding that adoption and delivery of the program of projects is in the public interest.

~~(2)~~

(3) In addition, the commission shall also consider the following factors when allocating these funds:

(A) "Velocity," which means the speed by which large cargo would travel from the land port of entry or seaport through the distribution system.

(B) "Throughput," which means the volume of cargo that would move from the land port of entry or seaport through the distribution system.

(C) "Reliability," which means a reasonably consistent and predictable amount of time for cargo to travel from one point to another on any given day or at any given time in California.

(D) "Congestion reduction," which means the reduction in recurrent daily hours of delay to be achieved.

SEC. 28. Section 2192.1 of the Streets and Highways Code is amended to read:

2192.1. (a) To the extent moneys from the Greenhouse Gas Reduction Fund, attributable to the auction or sale of allowances as part of a market-based compliance mechanism relative to reduction of greenhouse gas emissions, are transferred to the Trade Corridors Improvement Fund, projects funded with those moneys shall be subject to all of the requirements of existing law applicable to the expenditure of moneys appropriated from the Greenhouse Gas Reduction Fund, including, but not limited to, ~~both~~ *all* of the following:

(1) Projects shall further the regulatory purposes of the California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code), including reducing emissions from greenhouse gases in the state, directing public and private investment toward disadvantaged communities, increasing the diversity of energy sources, or creating opportunities for businesses, public agencies, nonprofits, and other

community institutions to participate in and benefit from statewide efforts to reduce emissions of greenhouse gases.

(2) Projects shall be consistent with the guidance developed by the State Air Resources Board pursuant to Section 39715 of the Health and Safety Code.

(3) Projects shall be consistent with the required benefits to disadvantaged communities pursuant to Section 39713 of the Health and Safety Code.

(b) All allocations of funds made by the commission pursuant to this section shall be made in a manner consistent with the criteria expressed in Section 39712 of the Health and Safety Code and with the investment plan developed by the Department of Finance pursuant to Section 39716 of the Health and Safety Code.

(c) For purposes of this section, "disadvantaged community" means a community with any of the following characteristics:

(1) An area with a median household income less than 80 percent of the statewide median household income based on the most current census tract-level data from the American Community Survey.

(2) An area identified by the California Environmental Protection Agency pursuant to Section 39711 of the Health and Safety Code.

(3) An area where at least 75 percent of public school students are eligible to receive free or reduced-price meals under the National School Lunch Program.

SEC. 29. Section 2192.2 of the Streets and Highways Code is amended to read:

2192.2. The commission shall allocate funds made available by this chapter to projects that have identified and committed supplemental funding from appropriate local, federal, or private sources. The commission shall determine the appropriate amount of supplemental funding each project should have to be eligible for moneys ~~from the fund~~ based on a project-by-project review and an assessment of the project's benefit to the state and the program. ~~Except for border access~~ *Funded* improvements ~~described in paragraph (5) of subdivision (b) of Section 2192, improvements funded with moneys from the fund~~ shall have supplemental funding that is at least equal to the amount of the contribution ~~from the fund.~~ *under this chapter.* The commission may give priority for

funding to projects with higher levels of committed supplemental funding.

SEC. 30. Section 2192.4 is added to the Streets and Highways Code, to read:

2192.4. The portion of the revenues in the Highway Users Tax Account attributable to the increase in the diesel fuel excise tax pursuant to subdivision (b) of Section 60050 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, shall be transferred to the Trade Corridors Improvement Fund.

SEC. 31. Section 9250.3 is added to the Vehicle Code, to read:

9250.3. (a) In addition to any other fees specified in this code or the Revenue and Taxation Code, commencing July 1, 2017, a registration fee of thirty-eight dollars ($38) shall be paid to the department for registration or renewal of registration of every vehicle subject to registration under this code, except those vehicles that are expressly exempted under this code from payment of registration fees.

(b) Beginning July 1, 2019, and every third year thereafter, the Department of Motor Vehicles shall adjust the fee imposed under this section for inflation in an amount equal to the change in the California Consumer Price Index for the prior three-year period, as calculated by the Department of Finance, with amounts equal to or greater than fifty cents ($0.50) rounded to the next highest whole dollar.

(c) Revenues from the fee, after the deduction of the department's administrative costs related to this section, shall be deposited in the Road Maintenance and Rehabilitation Account created pursuant to Section 2031 of the Streets and Highways Code.

SEC. 32. Section 9250.6 is added to the Vehicle Code, to read:

9250.6. (a) In addition to any other fees specified in this code, or the Revenue and Taxation Code, commencing July 1, 2017, a registration fee of one hundred and sixty-five dollars ($165) shall be paid to the department for registration or renewal of registration of every zero-emission motor vehicle subject to registration under this code, except those motor vehicles that are expressly exempted under this code from payment of registration fees.

(b) Beginning July 1, 2019, and every third year thereafter, the Department of Motor Vehicles shall adjust the fee imposed under

this section for inflation in an amount equal to the change in the California Consumer Price Index for the prior three-year period, as calculated by the Department of Finance, with amounts equal to or greater than fifty cents ($0.50) rounded to the next highest whole dollar.

(c) Revenues from the fee, after deduction of the department's administrative costs related to this section, shall be deposited in the Road Maintenance and Rehabilitation Account created pursuant to Section 2031 of the Streets and Highways Code.

(d) This section does not apply to a commercial motor vehicle subject to Section 9400.1 or to a low-speed vehicle, as defined in Section 385.5.

(e) The registration fee required pursuant to this section does not apply to the initial registration after the purchase of a new zero-emission motor vehicle.

(f) For purposes of this section, "zero-emission motor vehicle" means a motor vehicle as described in subdivisions (c) and (d) of Section 44258 of the Health and Safety Code.

SEC. 33. Section 9400.5 is added to the Vehicle Code, to read:

9400.5. (a) Notwithstanding Sections 9400.1, 9400.4, and 42205 of this code, Sections 16773 and 16965 of the Government Code, Section 2103 of the Streets and Highways Code, or any other law, weight fee revenues shall only be transferred consistent with the schedule provided in subdivision (b) from the State Highway Account to the Transportation Debt Service Fund, the Transportation Bond Direct Payment Account, or any other fund or account for the purpose of payment of the debt service on transportation general obligation bonds and shall not be loaned to the General Fund.

(b) (1) The transfer of weight fee revenues, after deduction of collection costs, from the State Highway Account pursuant to subdivision (a) shall not exceed:

(A) Nine hundred million dollars ($900,000,000) in the 2017–18 fiscal year.

(B) Eight hundred million dollars ($800,000,000) in the 2018–19 fiscal year.

(C) Seven hundred million dollars ($700,000,000) in the 2019–20 fiscal year.

(D) Six hundred million dollars ($600,000,000) in the 2020–21 fiscal year.

(E) Five hundred million dollars ($500,000,000) in the 2021-22 fiscal year and in every fiscal year thereafter.

SEC. 34. This act is an urgency statute necessary for the immediate preservation of the public peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are:

In order to provide additional funding for road maintenance and rehabilitation purposes as quickly as possible, it is necessary for this act to take effect immediately.

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South Coast Air Quality Management District
Legislative Analysis Summary – SB 1 (Beall)
Version: As Amended – 1/26/2017
Analyst: MK/PC

SB 1 (Beall)
Transportation Funding

Summary: This bill is an urgency statute that lays out a plan that proposes about $6 billion annually in new and redirected funding to address the urgent needs of the state's transportation system.

Specifically, it would, among other things, increase the gas tax and increase the vehicle registration fee, create a new $100 annual vehicle registration fee with an inflation adjustment for zero-emission motor vehicles, exclude the California Transportation Commission (CTC) from the California Transportation Agency (CalSTA) and create the Office of the Transportation Inspector General as an independent office in state government. This bill would also increase appropriations of moneys from the Greenhouse Gas Reduction Fund (GGRF) to 20% to the Transit and Intercity Rail Capital Program and to 10% to the Low Carbon Transit Operations Program annually.

Background: California's transportation revenues have not kept up with the need; California's gas tax hasn't been raised since 1994. As a result, California's freeway system faces a $59 billion maintenance shortfall over the next 10 years in order to keep it in a basic state of good repair, while local governments face a $78 billion shortfall over the next decade to adequately maintain the existing network of local streets and roads and bridges.

Funding for the California Highway, Local Street, and Road System
Existing law provides various sources of funding for transportation purposes, including funding for the state highway system and the local street and road system. These funding sources include, among others, fuel excise taxes, commercial vehicle weight fees, local transactions and use taxes, and federal funds. Existing law imposes certain registration fees on vehicles, with revenues from these fees deposited in the Motor Vehicle Account and used to fund the Department of Motor Vehicles and the Department of the California Highway Patrol. Existing law provides for the monthly transfer of excess balances in the Motor Vehicle Account to the State Highway Account.

California Transportation Commission
Existing law establishes in state government the Transportation Agency, which includes various departments and state entities, including the California Transportation Commission. Existing law vests the California Transportation Commission with specified powers, duties, and functions relative to transportation matters. Existing law requires the commission to retain independent authority to perform the duties and functions prescribed to it under any provision of law.

Trade Corridors Improvement Fund
The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 (Proposition 1B) created the Trade Corridors Improvement Fund and provided for allocation by the California Transportation Commission of $2 billion in bond funds for infrastructure improvements on highway and rail corridors that have a high volume of freight movement and for specified categories of projects eligible to receive these funds. Existing law continues the Trade Corridors Improvement Fund in existence in order to receive revenues from sources other than the bond act for these purposes.

Greenhouse Gas Reduction Fund
Existing law requires all moneys, except for fines and penalties, collected by the California Air Resources Board (CARB) from the auction or sale of allowances as part of a market-based compliance mechanism relative to reduction of greenhouse gas emissions to be deposited in the Greenhouse Gas Reduction Fund. Existing law continuously appropriates 10% of the annual proceeds of the fund to the Transit and Intercity Rail Capital Program and 5% of the annual proceeds of the fund to the Low Carbon Transit Operations Program.

Diesel Sales and Use Tax
Existing law, as of July 1, 2011, increases the sales and use tax on diesel and decreases the excise tax, as provided. Existing law requires the State Board of Equalization to annually modify both the gasoline and diesel excise tax rates on a going-forward basis so that the various changes in the taxes imposed on gasoline and diesel are revenue neutral.

Existing law, beyond the sales and use tax rate generally applicable, imposes an additional sales and use tax on diesel fuel at the rate of 1.75%, subject to certain exemptions, and provides for the net revenues collected from the additional tax to be transferred to the Public Transportation Account. Existing law continuously appropriates these and other revenues in the account to the Controller for allocation by formula to transportation agencies for public transit purposes under the State Transit Assistance Program. Existing law provides for appropriation of other revenues in the account to the Department of Transportation for various other transportation purposes, including intercity rail purposes.

Status: 2/02/2017 - Re-referred to Senate Comms. on T. & H., EQ., and GOV. & F.

Specific Provisions: Specifically, this bill would:

1. Increase the motor vehicle fuel (gasoline) tax, effective July 1, 2017, to an amount attributable to a raise in $0.12/gallon, phased in over three years with an adjustment for inflation; increase the annual vehicle registration fee to $38, effective October 1, 2017, with an adjustment for inflation; and increase the registration fee for a new annual vehicle to $100, applicable to zero-emission motor vehicles, with an adjustment for inflation, with the funds going to the Road Maintenance and Rehabilitation Program to address deferred maintenance on the state highway system and local street and road system.
2. Exclude the CTC from CalSTA, establish it as an entity in state government, and require it to act in an independent oversight role and make conforming changes.
3. Create the Office of the Transportation Inspector General in state government, as an independent office that would not be a subdivision of any other government entity, to ensure that all state agencies expending state transportation funds are operating efficiently, effectively, and in compliance with federal and state laws.
    a. Provide for the Governor to appoint the Transportation Inspector General for a 6-year term, subject to confirmation by the Senate, and would provide that the Transportation Inspector General may not be removed from office during the term except for good cause.
4. Deposit the revenues attributable to a $0.20/gallon increase in the diesel fuel excise tax imposed by the bill into the Trade Corridors Improvement Fund and would require revenues apportioned to the state from the national highway freight program established by the federal

Fixing America's Surface Transportation Act to be allocated for trade corridor improvement projects.

5. Increase the additional sales and use tax rate on diesel fuel by an additional 4% and beginning July 1, 2020, and every third year thereafter, require the State Board of Equalization to recalculate the gasoline and diesel excise tax rates and the additional sales and use tax rates on diesel fuel based upon the percentage change in the California Consumer Price Index transmitted to the board by the Department of Finance.
6. Beginning in the 2017-18 fiscal year, continuously appropriate 20% of annual proceeds collected by the California Air Resources Board from the auction or sale of allowances as part of a market-based compliance mechanism related to the reduction of greenhouse gas emissions into the Transit and Intercity Rail Capital Program and 10% of those annual proceeds to the Low Carbon Transit Operations Program.

Impacts on AQMD's Mission, Operations or Initiatives: This bill would generate funds that would be added to the existing Trade Corridors Improvement Fund created under Proposition 1B. SCAQMD received approximately $507,298,680 in Proposition 1B funds focused on improving air quality, as of December 2016, which will fund over 8,000 projects and reduce an estimated 2,334,000 lbs. of PM2.5 and 87,663,000 lbs. of NOx. The continuation of the portion of the program to benefit air quality would assist in the development of additional projects which would help reduce air pollution generated by goods movement operations and protect the health of South Coast residents.

SCAQMD Proposal: Staff recommends that SCAQMD work with the author, legislative leadership, and local partners, such as the Ports of Los Angeles and Long Beach, to secure amendments to this large transportation infrastructure bill that would provide funding for projects that will reduce air pollution and promote the development of zero and near-zero emission transportation technology. Specifically, a critical goal would be to increase available funding for use in providing for clean goods movement activities coming from the ports and throughout the trade corridors that exist within the South Coast region. Staff also recommends working to eliminate disincentives for zero emission vehicles included in the current legislation and examining whether CEQA exemptions included in the bill have a detrimental impact.

Recommended Position: Work with Author

AMENDED IN SENATE JANUARY 26, 2017

SENATE BILL No. 1

Introduced by Senator Beall
(Coauthors: Senators Dodd, Hertzberg, Hill, McGuire, Mendoza, Monning, Wieckowski, and Wiener)

December 5, 2016

An act to amend Sections 13975, 14500, 14526.5, and 16965 of, to add Sections 14033, 14110, 14526.7, and 16321 to, to add Part 5.1 (commencing with Section 14460) to Division 3 of Title 2 of, and to repeal Section 14534.1 of, the Government Code, to amend Section 39719 of the Health and Safety Code, to amend Section 21080.37 of, and to add *and repeal* Division 13.6 (commencing with Section 21200) ~~to,~~ *of,* the Public Resources Code, to amend Section 99312.1 of the Public Utilities Code, to amend Sections 6051.8, 6201.8, 7360, 8352.4, 8352.5, 8352.6, and 60050 of the Revenue and Taxation Code, to amend Sections 183.1, 2192, and 2192.2 of, to add Sections 820.1, 2103.1, and 2192.4 to, and to add Chapter 2 (commencing with Section 2030) to Division 3 of, the Streets and Highways Code, and to add Sections 9250.3, 9250.6, and 9400.5 to the Vehicle Code, relating to transportation, making an appropriation therefor, and declaring the urgency thereof, to take effect immediately.

LEGISLATIVE COUNSEL'S DIGEST

SB 1, as amended, Beall. Transportation funding.

(1) Existing law provides various sources of funding for transportation purposes, including funding for the state highway system and the local street and road system. These funding sources include, among others, fuel excise taxes, commercial vehicle weight fees, local transactions and use taxes, and federal funds. Existing law imposes certain

registration fees on vehicles, with revenues from these fees deposited in the Motor Vehicle Account and used to fund the Department of Motor Vehicles and the Department of the California Highway Patrol. Existing law provides for the monthly transfer of excess balances in the Motor Vehicle Account to the State Highway Account.

This bill would create the Road Maintenance and Rehabilitation Program to address deferred maintenance on the state highway system and the local street and road system. The bill would require the California Transportation Commission to adopt performance criteria, consistent with a specified asset management plan, to ensure efficient use of certain funds available for the program. The bill would provide for the deposit of various funds for the program in the Road Maintenance and Rehabilitation Account, which the bill would create in the State Transportation Fund, including revenues attributable to a $0.12 per gallon increase, phased in over 3 years, in the motor vehicle fuel (gasoline) tax imposed by the bill with an inflation adjustment, as provided, an increase of $38 in the annual vehicle registration fee with an inflation adjustment, as provided, a new $100 annual vehicle registration fee with an inflation adjustment, as provided, applicable to zero-emission motor vehicles, as defined, and certain miscellaneous revenues described in (7) below that are not restricted as to expenditure by Article XIX of the California Constitution.

This bill would annually set aside $200,000,000 of the funds available for the program to fund road maintenance and rehabilitation purposes in counties that have sought and received voter approval of taxes or that have imposed fees, including uniform developer fees, as defined, which taxes or fees are dedicated solely to transportation improvements. These funds would be continuously appropriated for allocation pursuant to guidelines to be developed by the California Transportation Commission in consultation with local agencies. The bill would require $80,000,000 of the funds available for the program to be annually transferred to the State Highway Account for expenditure on the Active Transportation Program. The bill would require $30,000,000 of the funds available for the program in each of 4 fiscal years beginning in 2017–18 to be transferred to the Advance Mitigation Fund created by the bill pursuant to (12) below. The bill would continuously appropriate $2,000,000 annually of the funds available for the program to the California State University for the purpose of conducting transportation research and transportation-related workforce education, training, and development. The bill would require the remaining funds available for

the program to be allocated 50% for maintenance of the state highway system or to the state highway operation and protection program and 50% to cities and counties pursuant to a specified formula. The bill would impose various requirements on the department and agencies receiving these funds. The bill would authorize a city or county to spend its apportionment of funds under the program on transportation priorities other than those allowable pursuant to the program if the city's or county's average Pavement Condition Index meets or exceeds 80.

The bill would also require the department to annually identify savings achieved through efficiencies implemented at the department and to propose, from the identified savings, an appropriation to be included in the annual Budget Act of up to $70,000,000 from the State Highway Account for expenditure on the Active Transportation Program.

(2) Existing law establishes in state government the Transportation Agency, which includes various departments and state entities, including the California Transportation Commission. Existing law vests the California Transportation Commission with specified powers, duties, and functions relative to transportation matters. Existing law requires the commission to retain independent authority to perform the duties and functions prescribed to it under any provision of law.

This bill would exclude the California Transportation Commission from the Transportation Agency, establish it as an entity in state government, and require it to act in an independent oversight role. The bill would also make conforming changes.

(3) Existing law creates various state agencies, including the Department of Transportation, the High-Speed Rail Authority, the Department of the California Highway Patrol, the Department of Motor Vehicles, and the State Air Resources Board, with specified powers and duties. Existing law provides for the allocation of state transportation funds to various transportation purposes.

This bill would create the Office of the Transportation Inspector General in state government, as an independent office that would not be a subdivision of any other government entity, to ensure that all of the above-referenced state agencies and all other state agencies expending state transportation funds are operating efficiently, effectively, and in compliance with federal and state laws. The bill would provide for the Governor to appoint the Transportation Inspector General for a 6-year term, subject to confirmation by the Senate, and would provide that the Transportation Inspector General may not be removed from office during the term except for good cause. The bill

would specify the duties and responsibilities of the Transportation Inspector General and would require an annual report to the Legislature and Governor.

This bill would require the department to update the Highway Design Manual to incorporate the "complete streets" design concept by January 1, 2018. The bill would require the department to develop a plan by January 1, 2020, to increase by 100% the dollar value of contracts awarded to small businesses, disadvantaged business enterprises, and disabled veteran business enterprises.

(4) Existing law provides for loans of revenues from various transportation funds and accounts to the General Fund, with various repayment dates specified.

This bill would require the Department of Finance, on or before March 1, 2017, to compute the amount of outstanding loans made from specified transportation funds. The bill would require the Department of Transportation to prepare a loan repayment schedule and would require the outstanding loans to be repaid pursuant to that schedule, as prescribed. The bill would appropriate funds for that purpose from the Budget Stabilization Account. The bill would require the repaid funds to be transferred, pursuant to a specified formula, to cities and counties and to the department for maintenance of the state highway system and for purposes of the state highway operation and protection program.

(5) The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 (Proposition 1B) created the Trade Corridors Improvement Fund and provided for allocation by the California Transportation Commission of $2 billion in bond funds for infrastructure improvements on highway and rail corridors that have a high volume of freight movement and for specified categories of projects eligible to receive these funds. Existing law continues the Trade Corridors Improvement Fund in existence in order to receive revenues from sources other than the bond act for these purposes.

This bill would deposit the revenues attributable to a $0.20 per gallon increase in the diesel fuel excise tax imposed by the bill into the Trade Corridors Improvement Fund. The bill would require revenues apportioned to the state from the national highway freight program established by the federal Fixing America's Surface Transportation Act to be allocated for trade corridor improvement projects approved pursuant to these provisions.

Existing law requires the commission, in determining projects eligible for funding, to consult various state freight and regional infrastructure and goods movement plans and the statewide port master plan.

This bill would revise the list of plans to be consulted by the commission in prioritizing projects for funding. The bill would also expand eligible projects to include, among others, rail landside access improvements, landside freight access improvements to airports, and certain capital and operational improvements. The bill would identify specific amounts to be allocated from available federal funds to certain categories of projects.

(6) Existing law requires all moneys, except for fines and penalties, collected by the State Air Resources Board from the auction or sale of allowances as part of a market-based compliance mechanism relative to reduction of greenhouse gas emissions to be deposited in the Greenhouse Gas Reduction Fund. Existing law continuously appropriates 10% of the annual proceeds of the fund to the Transit and Intercity Rail Capital Program and 5% of the annual proceeds of the fund to the Low Carbon Transit Operations Program.

This bill would, beginning in the ~~2017-18~~ *2017–18* fiscal year, instead continuously appropriate 20% of those annual proceeds to the Transit and Intercity Rail Capital Program and 10% of those annual proceeds to the Low Carbon Transit Operations Program, thereby making an appropriation.

(7) Article XIX of the California Constitution restricts the expenditure of revenues from taxes imposed by the state on fuels used in motor vehicles upon public streets and highways to street and highway and certain mass transit purposes. Existing law requires certain miscellaneous revenues deposited in the State Highway Account that are not restricted as to expenditure by Article XIX of the California Constitution to be transferred to the Transportation Debt Service Fund in the State Transportation Fund, as specified, and requires the Controller to transfer from the fund to the General Fund an amount of those revenues necessary to offset the current year debt service made from the General Fund on general obligation transportation bonds issued pursuant to Proposition 116 of 1990.

This bill would delete the transfer of these miscellaneous revenues to the Transportation Debt Service Fund, thereby eliminating the offsetting transfer to the General Fund for debt service on general obligation transportation bonds issued pursuant to Proposition 116 of 1990. The bill, subject to a specified exception, would instead require

the miscellaneous revenues to be retained in the State Highway Account and to be deposited in the Road Maintenance and Rehabilitation Account.

(8) Article XIX of the California Constitution requires gasoline excise tax revenues from motor vehicles traveling upon public streets and highways to be deposited in the Highway Users Tax Account, for allocation to city, county, and state transportation purposes. Existing law generally provides for statutory allocation of gasoline excise tax revenues attributable to other modes of transportation, including aviation, boats, agricultural vehicles, and off-highway vehicles, to particular accounts and funds for expenditure on purposes associated with those other modes, except that a specified portion of these gasoline excise tax revenues is deposited in the General Fund. Expenditure of the gasoline excise tax revenues attributable to those other modes is not restricted by Article XIX of the California Constitution.

This bill, commencing July 1, 2017, would instead transfer to the Highway Users Tax Account for allocation to state and local transportation purposes under a specified formula the portion of gasoline excise tax revenues currently being deposited in the General Fund that are attributable to boats, agricultural vehicles, and off-highway vehicles. Because that account is continuously appropriated, the bill would make an appropriation. The bill, commencing July 1, 2017, would transfer, to the Road Maintenance and Rehabilitation Account, the portion of gasoline excise tax revenues attributable to these uses that would be derived from increases in the gasoline excise tax rate described in (1) above.

(9) Existing law, as of July 1, 2011, increases the sales and use tax on diesel and decreases the excise tax, as provided. Existing law requires the State Board of Equalization to annually modify both the gasoline and diesel excise tax rates on a going-forward basis so that the various changes in the taxes imposed on gasoline and diesel are revenue neutral.

This bill would eliminate the annual rate adjustment to maintain revenue neutrality for the gasoline and diesel excise tax rates and would reimpose the higher gasoline excise tax rate that was in effect on July 1, 2010, in addition to the increase in the rate described in (1) above.

Existing law, beyond the sales and use tax rate generally applicable, imposes an additional sales and use tax on diesel fuel at the rate of 1.75%, subject to certain exemptions, and provides for the net revenues collected from the additional tax to be transferred to the Public Transportation Account. Existing law continuously appropriates these

and other revenues in the account to the Controller for allocation by formula to transportation agencies for public transit purposes under the State Transit Assistance Program. Existing law provides for appropriation of other revenues in the account to the Department of Transportation for various other transportation purposes, including intercity rail purposes.

This bill would increase the additional sales and use tax rate on diesel fuel by an additional 4%. The bill would restrict expenditures of revenues attributable to the 3.5% rate increase to transit capital purposes and certain transit services and would require a recipient transit agency to comply with certain requirements, including submitting a list of proposed projects to the Department of Transportation, as a condition of receiving a portion of these funds under the State Transit Assistance Program. The bill would require an existing required audit of transit operator finances to verify that these new revenues have been expended in conformance with these specific restrictions and all other generally applicable requirements. By increasing the amount of revenues in the Public Transportation Account that are continuously appropriated, the bill would thereby make an appropriation. The bill would require the revenues attributable to the remaining 0.5% rate increase to be allocated, upon appropriation, to the department for intercity rail and commuter rail purposes.

This bill would, beginning July 1, 2020, and every 3rd year thereafter, require the State Board of Equalization to recompute the gasoline and diesel excise tax rates and the additional sales and use tax rate on diesel fuel based upon the percentage change in the California Consumer Price Index transmitted to the board by the Department of Finance, as prescribed.

(10) Existing law requires the Department of Transportation to prepare a state highway operation and protection program every other year for the expenditure of transportation capital improvement funds for projects that are necessary to preserve and protect the state highway system, excluding projects that add new traffic lanes. The program is required to be based on an asset management plan, as specified. Existing law requires the department to specify, for each project in the program the capital and support budget and projected delivery date for various components of the project. Existing law provides for the California Transportation Commission to review and adopt the program, and authorizes the commission to decline and adopt the program if it

determines that the program is not sufficiently consistent with the asset management plan.

This bill would require the commission, as part of its review of the program, to hold at least one hearing in northern California and one hearing in southern California regarding the proposed program. The bill would require the department to submit any change to a programmed project as an amendment to the commission for its approval.

This bill, on and after August 1, 2017, would also require the commission to make an allocation of all capital and support costs for each project in the program, and would require the department to submit a supplemental project allocation request to the commission for each project that experiences cost increases above the amounts in its allocation. The bill would require the commission to establish guidelines to provide exceptions to the requirement for a supplemental project allocation requirement that the commission determines are necessary to ensure that projects are not unnecessarily delayed.

(11) Existing law imposes weight fees on the registration of commercial motor vehicles and provides for the deposit of net weight fee revenues into the State Highway Account. Existing law provides for the transfer of certain weight fee revenues from the State Highway Account to the Transportation Debt Service Fund to reimburse the General Fund for payment of debt service on general obligation bonds issued for transportation purposes. Existing law also provides for the transfer of certain weight fee revenues to the Transportation Bond Direct Payment Account for direct payment of debt service on designated bonds, which are defined to be certain transportation general obligation bonds issued pursuant to Proposition 1B of 2006. Existing law also provides for loans of weight fee revenues to the General Fund to the extent the revenues are not needed for bond debt service purposes, with the loans to be repaid when the revenues are later needed for those purposes, as specified.

This bill, notwithstanding these provisions or any other law, would only authorize specified percentages of weight fee revenues to be transferred from the State Highway Account to the Transportation Debt Service Fund, the Transportation Bond Direct Payment Account, or any other fund or account for the purpose of payment of the debt service on transportation general obligation bonds in accordance with a prescribed schedule, with no more than 50% of weight fee revenues to be used for debt service purposes beginning with the 2021–22 fiscal year. The bill would require the California Transportation Commission,

by January 1, 2018, to recommend a course of action to the Legislature and Governor that would retain the remaining 50% share of weight fee revenues in the State Highway Account or provide for the transfer of those revenues to the Road Maintenance and Rehabilitation Account. The bill would also prohibit loans of weight fee revenues to the General Fund.

(12) The California Environmental Quality Act (CEQA) requires a lead agency, as defined, to prepare, or cause to be prepared, and certify the completion of, an environmental impact report on a project that it proposes to carry out or approve that may have a significant effect on the environment or to adopt a negative declaration if it finds that the project will not have that effect. CEQA also requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment.

CEQA, until January 1, 2020, exempts a project or an activity to repair, maintain, or make minor alterations to an existing roadway, as defined, other than a state roadway, if the project or activity is carried out by a city or county with a population of less than 100,000 persons to improve public safety and meets other specified requirements.

This bill would extend the above-referenced exemption ~~indefinitely~~ *to January 1, 2023,* and delete the *population* limitation of *the city or county for* the ~~exemption to projects or activities in cities and counties with a population of less than 100,000 persons. The bill would also expand the exemption to include state roadways.~~ *exemption.*

This bill would also ~~establish~~ *establish, until January 1, 2023,* the Advance Mitigation Program in the Department of Transportation. The bill would authorize the department to undertake specified mitigation measures in advance of construction of planned transportation improvements. The bill would require the department to establish a steering committee to advise the department on advance mitigation measures and related matters. The bill would create the Advance Mitigation Fund as a continuously appropriated revolving fund, to be funded initially from the Road Maintenance and Rehabilitation Program pursuant to (1) above. The bill would provide for reimbursement of the revolving fund at the time a planned transportation improvement benefiting from advance mitigation is constructed. *The bill would require*

the department to submit to the Legislature annual reports and a final report on the operation of the program.

(13) Existing federal law requires the United States Secretary of Transportation to carry out a surface transportation project delivery program, under which the participating states assume certain responsibilities for environmental review and clearance of transportation projects that would otherwise be the responsibility of the federal government. Existing law, until January 1, 2017, when these provisions are repealed, provides that the State of California consents to the jurisdiction of the federal courts with regard to the compliance, discharge, or enforcement of the responsibilities the Department of Transportation assumed as a participant in this program.

This bill would reenact these provisions.

(14) This bill would provide that the fuel tax increases imposed by the bill would be effective on July 1, 2017. The bill would provide that the vehicle fee increases imposed by the bill would be effective on October 1, 2017.

(15) This bill would declare that it is to take effect immediately as an urgency statute.

Vote: ⅔. Appropriation: yes. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) Over the next 10 years, the state faces a $59 billion shortfall to adequately maintain the existing state highway system in order to keep it in a basic state of good repair.

(b) Similarly, cities and counties face a $78 billion shortfall over the next decade to adequately maintain the existing network of local streets and roads.

(c) Statewide taxes and fees dedicated to the maintenance of the system have not been increased in more than 20 years, with those revenues losing more than 55 percent of their purchasing power, while costs to maintain the system have steadily increased and much of the underlying infrastructure has aged past its expected useful life.

(d) California motorists are spending $17 billion annually in extra maintenance and car repair bills, which is more than $700 per driver, due to the state's poorly maintained roads.

(e) Failing to act now to address this growing problem means that more drastic measures will be required to maintain our system in the future, essentially passing the burden on to future generations instead of doing our job today.

(f) A funding program will help address a portion of the maintenance backlog on the state's road system and will stop the growth of the problem.

(g) Modestly increasing various fees can spread the cost of road repairs broadly to all users and beneficiaries of the road network without overburdening any one group.

(h) Improving the condition of the state's road system will have a positive impact on the economy as it lowers the transportation costs of doing business, reduces congestion impacts for employees, and protects property values in the state.

(i) The federal government estimates that increased spending on infrastructure creates more than 13,000 jobs per $1 billion spent.

(j) Well-maintained roads benefit all users, not just drivers, as roads are used for all modes of transport, whether motor vehicles, transit, bicycles, or pedestrians.

(k) Well-maintained roads additionally provide significant health benefits and prevent injuries and death due to crashes caused by poorly maintained infrastructure.

(*l*) A comprehensive, reasonable transportation funding package will do all of the following:

(1) Ensure these transportation needs are addressed.

(2) Fairly distribute the economic impact of increased funding.

(3) Restore the gas tax rate previously reduced by the State Board of Equalization pursuant to the gas tax swap.

(4) Direct increased revenue to the state's highest transportation needs.

SEC. 2. Section 13975 of the Government Code is amended to read:

13975. There is in the state government the Transportation Agency. The agency consists of the Department of the California Highway Patrol, the Department of Motor Vehicles, the Department of Transportation, the High-Speed Rail Authority, and the Board

of Pilot Commissioners for the Bays of San Francisco, San Pablo, and Suisun.

SEC. 3. Section 14033 is added to the Government Code, to read:

14033. On or before January 1, 2018, the department shall update the Highway Design Manual to incorporate the "complete streets" design concept.

SEC. 4. Section 14110 is added to the Government Code, to read:

14110. The department shall develop a plan by January 1, 2020, to increase by 100 percent the dollar value of contracts awarded to small businesses, disadvantaged business enterprises, and disabled veteran business enterprises.

SEC. 5. Part 5.1 (commencing with Section 14460) is added to Division 3 of Title 2 of the Government Code, to read:

PART 5.1. OFFICE OF THE TRANSPORTATION INSPECTOR GENERAL

14460. (a) There is hereby created in state government the independent Office of the Transportation Inspector General, which shall not be a subdivision of any other governmental entity, to ensure that the Department of Transportation, the High-Speed Rail Authority, the Department of the California Highway Patrol, the Department of Motor Vehicles, the State Air Resources Board, and all other state agencies expending state transportation funds are operating efficiently, effectively, and in compliance with applicable federal and state laws.

(b) The Governor shall appoint, subject to confirmation by the Senate, the Transportation Inspector General to a six-year term. The Transportation Inspector General may not be removed from office during that term, except for good cause. A finding of good cause may include substantial neglect of duty, gross misconduct, or conviction of a crime. The reasons for removal of the Transportation Inspector General shall be stated in writing and shall include the basis for removal. The writing shall be sent to the Secretary of the Senate and the Chief Clerk of the Assembly at the time of the removal and shall be deemed to be a public document.

14461. The Transportation Inspector General shall review policies, practices, and procedures and conduct audits and investigations of activities involving state transportation funds in consultation with all affected state agencies. Specifically, the Transportation Inspector General's duties and responsibilities shall include, but not be limited to, all of the following:

(a) To examine the operating practices of all state agencies expending state transportation funds to identify fraud and waste, opportunities for efficiencies, and opportunities to improve the data used to determine appropriate project resource allocations.

(b) To identify best practices in the delivery of transportation projects and develop policies or recommend proposed legislation enabling state agencies to adopt these practices when practicable.

(c) To provide objective analysis of and, when possible, offer solutions to concerns raised by the public or generated within agencies involving the state's transportation infrastructure and project delivery methods.

(d) To conduct, supervise, and coordinate audits and investigations relating to the programs and operations of all state transportation agencies with state-funded transportation projects.

(e) To recommend policies promoting economy and efficiency in the administration of programs and operations of all state agencies with state-funded transportation projects.

(f) To ensure that the Secretary of Transportation and the Legislature are fully and currently informed concerning fraud or other serious abuses or deficiencies relating to the expenditure of funds or administration of programs and operations.

14462. The Transportation Inspector General shall report at least annually to the Governor and Legislature with a summary of his or her findings, investigations, and audits. The summary shall be posted on the Transportation Inspector General's Internet Web site and shall otherwise be made available to the public upon its release to the Governor and Legislature. The summary shall include, but need not be limited to, significant problems discovered by the Transportation Inspector General and whether recommendations of the Transportation Inspector General relative to investigations and audits have been implemented by the affected agencies. The report shall be submitted to the Legislature in compliance with Section 9795.

SEC. 6. Section 14500 of the Government Code is amended to read:

14500. There is in state government a California Transportation Commission. The commission shall act in an independent oversight role.

SEC. 7. Section 14526.5 of the Government Code is amended to read:

14526.5. (a) Based on the asset management plan prepared and approved pursuant to Section 14526.4, the department shall prepare a state highway operation and protection program for the expenditure of transportation funds for major capital improvements that are necessary to preserve and protect the state highway system. Projects included in the program shall be limited to improvements relative to the maintenance, safety, operation, and rehabilitation of state highways and bridges that do not add a new traffic lane to the system.

(b) The program shall include projects that are expected to be advertised prior to July 1 of the year following submission of the program, but which have not yet been funded. The program shall include those projects for which construction is to begin within four fiscal years, starting July 1 of the year following the year the program is submitted.

(c) (1) The department, at a minimum, shall specify, for each project in the state highway operation and protection program, the capital and support budget for each of the following project components:

(A) Project approval and environmental documents.

(B) Plans, specifications, and estimates.

(C) Rights-of-way.

(D) Construction.

(2) The department shall specify, for each project in the state highway operation and protection program, a projected delivery date for each of the following components:

(A) Environmental document completion.

(B) Plans, specifications, and estimate completion.

(C) Right-of-way certification.

(D) Start of construction.

(d) The department shall submit its proposed program to the commission not later than January 31 of each even-numbered year. Prior to submitting its proposed program, the department shall

make a draft of its proposed program available to transportation planning agencies for review and comment and shall include the comments in its submittal to the commission. The department shall provide the commission with detailed information for all programmed projects, including, but not limited to, cost, scope, schedule, and performance metrics as determined by the commission.

(e) The commission shall review the proposed program relative to its overall adequacy, consistency with the asset management plan prepared and approved pursuant to Section 14526.4 and funding priorities established in Section 167 of the Streets and Highways Code, the level of annual funding needed to implement the program, and the impact of those expenditures on the state transportation improvement program. The commission shall adopt the program and submit it to the Legislature and the Governor not later than April 1 of each even-numbered year. The commission may decline to adopt the program if the commission determines that the program is not sufficiently consistent with the asset management plan prepared and approved pursuant to Section 14526.4.

(f) As part of the commission's review of the program required pursuant to subdivision (a), the commission shall hold at least one hearing in northern California and one hearing in southern California regarding the proposed program.

(g) Expenditures for these projects shall not be subject to Sections 188 and 188.8 of the Streets and Highways Code.

(h) Following adoption of the state highway operation and protection program by the commission, any change to a programmed project shall be submitted as an amendment by the department to the commission for its approval before the change may be implemented.

SEC. 8. Section 14526.7 is added to the Government Code, to read:

14526.7. (a) On and after August 1, 2017, an allocation by the commission of all capital and support costs for each project in the state highway operation and protection program shall be required.

(b) For a project that experiences increases in capital or support costs above the amounts in the commission's allocation pursuant to subdivision (a), a supplemental project allocation request shall be submitted by the department to the commission for approval.

(c) The commission shall establish guidelines to provide exceptions to the requirement of subdivision (b) that the commission determines are necessary to ensure that projects are not unnecessarily delayed.

SEC. 9. Section 14534.1 of the Government Code is repealed.

SEC. 10. Section 16321 is added to the Government Code, to read:

16321. (a) Notwithstanding any other law, on or before March 1, 2017, the Department of Finance shall compute the amount of outstanding loans made from the State Highway Account, the Motor Vehicle Fuel Account, the Highway Users Tax Account, and the Motor Vehicle Account to the General Fund. The department shall prepare a loan repayment schedule, pursuant to which the outstanding loans shall be repaid, as follows:

(1) On or before December 31, 2017, 50 percent of the outstanding loan amounts.

(2) On or before December 31, 2018, the remainder of the outstanding loan amounts.

(b) Notwithstanding any other law, as the loans are repaid pursuant to this section, the repaid funds shall be transferred in the following manner:

(1) Fifty percent to cities and counties pursuant to clauses (i) and (ii) of subparagraph (C) of paragraph (3) of subdivision (a) of Section 2103 of the Streets and Highways Code.

(2) Fifty percent to the department for maintenance of the state highway system and for purposes of the state highway operation and protection program.

(c) Funds for loan repayments pursuant to this section are hereby appropriated from the Budget Stabilization Account pursuant to subclause (II) of clause (ii) of subparagraph (B) of paragraph (1) of subdivision (c) of Section 20 of Article XVI of the California Constitution.

SEC. 11. Section 16965 of the Government Code is amended to read:

16965. (a) (1) The Transportation Debt Service Fund is hereby created in the State Treasury. Moneys in the fund shall be dedicated to all of the following purposes:

(A) Payment of debt service with respect to designated bonds, as defined in subdivision (c) of Section 16773, and as further provided in paragraph (3) and subdivision (b).

(B) To reimburse the General Fund for debt service with respect to bonds.

(C) To redeem or retire bonds, pursuant to Section 16774, maturing in a subsequent fiscal year.

(2) The bonds eligible under subparagraph (B) or (C) of paragraph (1) include bonds issued pursuant to the Passenger Rail and Clean Air Bond Act of 1990 (Chapter 17 (commencing with Section 2701) of Division 3 of the Streets and Highways Code), the Seismic Retrofit Bond Act of 1996 (Chapter 12.48 (commencing with Section 8879) of Division 1 of Title 2), and the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century (Chapter 20 (commencing with Section 2704) of Division 3 of the Streets and Highways Code), and nondesignated bonds under Proposition 1B, as defined in subdivision (c) of Section 16773.

(3) (A) The Transportation Bond Direct Payment Account is hereby created in the State Treasury, as a subaccount within the Transportation Debt Service Fund, for the purpose of directly paying the debt service, as defined in paragraph (4), of designated bonds of Proposition 1B, as defined in subdivision (c) of Section 16773. Notwithstanding Section 13340, moneys in the Transportation Bond Direct Payment Account are continuously appropriated for payment of debt service with respect to designated bonds as provided in subdivision (c) of Section 16773. So long as any designated bonds remain outstanding, the moneys in the Transportation Bond Direct Payment Account may not be used for any other purpose, and may not be borrowed by or available for transfer to the General Fund pursuant to Section 16310 or any similar law, or to the General Cash Revolving Fund pursuant to Section 16381 or any similar law.

(B) Once the Treasurer makes a certification that payment of debt service with respect to all designated bonds has been paid or provided for, any remaining moneys in the Transportation Bond Direct Payment Account shall be transferred back to the Transportation Debt Service Fund.

(C) The moneys in the Transportation Bond Direct Payment Account shall be invested in the Surplus Money Investment Fund, and all investment earnings shall accrue to the account.

(D) The Controller may establish subaccounts within the Transportation Bond Direct Payment Account as may be required

by the resolution, indenture, or other documents governing any designated bonds.

(4) For purposes of this subdivision and subdivision (b), and subdivision (c) of Section 16773, "debt service" means payment of all of the following costs and expenses with respect to any designated bond:

(A) The principal of and interest on the bonds.

(B) Amounts payable as the result of tender on any bonds, as described in clause (iv) of subparagraph (B) of paragraph (1) of subdivision (d) of Section 16731.

(C) Amounts payable under any contractual obligation of the state to repay advances and pay interest thereon under a credit enhancement or liquidity agreement as described in clause (iv) of subparagraph (B) of paragraph (1) of subdivision (d) of Section 16731.

(D) Any amount owed by the state to a counterparty after any offset for payments owed to the state on any hedging contract as described in subparagraph (A) of paragraph (2) of subdivision (d) of Section 16731.

(b) From the moneys transferred to the fund pursuant to paragraph (2) or (3) of subdivision (c) of Section 9400.4 of the Vehicle Code, there shall first be deposited into the Transportation Bond Direct Payment Account in each month sufficient funds to equal the amount designated in a certificate submitted by the Treasurer to the Controller and the Director of Finance at the start of each fiscal year, and as may be modified by the Treasurer thereafter upon issuance of any new issue of designated bonds or upon change in circumstances that requires such a modification. This certificate shall be calculated by the Treasurer to identify, for each month, the amount necessary to fund all of the debt service with respect to all designated bonds. This calculation shall be done in a manner provided in the resolution, indenture, or other documents governing the designated bonds. In the event that transfers to the Transportation Bond Direct Payment Account in any month are less than the amounts required in the Treasurer's certificate, the shortfall shall carry over to be part of the required payment in the succeeding month or months.

(c) The state hereby covenants with the holders from time to time of any designated bonds that it will not alter, amend, or restrict the provisions of subdivision (c) of Section 16773 of the

Government Code, or Sections 9400, 9400.1, 9400.4, and 42205 of the Vehicle Code, which provide directly or indirectly for the transfer of weight fees to the Transportation Debt Service Fund or the Transportation Bond Direct Payment Account, or subdivisions (a) and (b) of this section, or reduce the rate of imposition of vehicle weight fees under Sections 9400 and 9400.1 of the Vehicle Code as they existed on the date of the first issuance of any designated bonds, if that alteration, amendment, restriction, or reduction would result in projected weight fees for the next fiscal year determined by the Director of Finance being less than two times the maximum annual debt service with respect to all outstanding designated bonds, as such calculation is determined pursuant to the resolution, indenture, or other documents governing the designated bonds. The state may include this covenant in the resolution, indenture, or other documents governing the designated bonds.

(d) Once the required monthly deposit, including makeup of any shortfalls from any prior month, has been made pursuant to subdivision (b), from moneys transferred to the fund pursuant to paragraph (2) or (3) of subdivision (c) of Section 9400.4 of the Vehicle Code, or pursuant to Section 16965.1 or 63048.67, the Controller shall transfer as an expenditure reduction to the General Fund any amount necessary to offset the cost of current year debt service payments made from the General Fund with respect to any bonds issued pursuant to Proposition 192 (1996) and three-quarters of the amount of current year debt service payments made from the General Fund with respect to any nondesignated bonds, as defined in subdivision (c) of Section 16773, issued pursuant to Proposition 1B (2006). In the alternative, these funds may also be used to redeem or retire the applicable bonds, pursuant to Section 16774, maturing in a subsequent fiscal year as directed by the Director of Finance.

(e) Once the required monthly deposit, including makeup of any shortfalls from any prior month, has been made pursuant to subdivision (b), from moneys transferred to the fund pursuant to paragraph (2) or (3) of subdivision (c) of Section 9400.4 of the Vehicle Code, or pursuant to Section 16965.1 or 63048.67, the Controller shall transfer as an expenditure reduction to the General Fund any amount necessary to offset the eligible cost of current year debt service payments made from the General Fund with

respect to any bonds issued pursuant to Proposition 108 (1990) and Proposition 1A (2008), and one-quarter of the amount of current year debt service payments made from the General Fund with respect to any nondesignated bonds, as defined in subdivision (c) of Section 16773, issued pursuant to Proposition 1B (2006). The Department of Finance shall notify the Controller by July 30 of every year of the percentage of debt service that is expected to be paid in that fiscal year with respect to bond-funded projects that qualify as eligible guideway projects consistent with the requirements applicable to the expenditure of revenues under Article XIX of the California Constitution, and the Controller shall make payments only for those eligible projects. In the alternative, these funds may also be used to redeem or retire the applicable bonds, pursuant to Section 16774, maturing in a subsequent fiscal year as directed by the Director of Finance.

(f) On or before the second business day following the date on which transfers are made to the Transportation Debt Service Fund, and after the required monthly deposits for that month, including makeup of any shortfalls from any prior month, have been made to the Transportation Bond Direct Payment Account, the Controller shall transfer the funds designated for reimbursement of bond debt service with respect to nondesignated bonds, as defined in subdivision (c) of Section 16773, and other bonds identified in subdivisions (d) and (e) in that month from the fund to the General Fund pursuant to this section.

SEC. 12. Section 39719 of the Health and Safety Code is amended to read:

39719. (a) The Legislature shall appropriate the annual proceeds of the fund for the purpose of reducing greenhouse gas emissions in this state in accordance with the requirements of Section 39712.

(b) To carry out a portion of the requirements of subdivision (a), annual proceeds are continuously appropriated for the following:

(1) Beginning in the 2017–18 fiscal year, and notwithstanding Section 13340 of the Government Code, 50 percent of annual proceeds are continuously appropriated, without regard to fiscal years, for transit, affordable housing, and sustainable communities programs as follows:

(A) Twenty percent of the annual proceeds of the fund is hereby continuously appropriated to the Transportation Agency for the Transit and Intercity Rail Capital Program created by Part 2 (commencing with Section 75220) of Division 44 of the Public Resources Code.

(B) Ten percent of the annual proceeds of the fund is hereby continuously appropriated to the Low Carbon Transit Operations Program created by Part 3 (commencing with Section 75230) of Division 44 of the Public Resources Code. Moneys shall be allocated by the Controller, according to requirements of the program, and pursuant to the distribution formula in subdivision (b) or (c) of Section 99312 of, and Sections 99313 and 99314 of, the Public Utilities Code.

(C) Twenty percent of the annual proceeds of the fund is hereby continuously appropriated to the Strategic Growth Council for the Affordable Housing and Sustainable Communities Program created by Part 1 (commencing with Section 75200) of Division 44 of the Public Resources Code. Of the amount appropriated in this subparagraph, no less than 10 percent of the annual proceeds shall be expended for affordable housing, consistent with the provisions of that program.

(2) Beginning in the 2015–16 fiscal year, notwithstanding Section 13340 of the Government Code, 25 percent of the annual proceeds of the fund is hereby continuously appropriated to the High-Speed Rail Authority for the following components of the initial operating segment and Phase I Blended System as described in the 2012 business plan adopted pursuant to Section 185033 of the Public Utilities Code:

(A) Acquisition and construction costs of the project.

(B) Environmental review and design costs of the project.

(C) Other capital costs of the project.

(D) Repayment of any loans made to the authority to fund the project.

(c) In determining the amount of annual proceeds of the fund for purposes of the calculation in subdivision (b), the funds subject to Section 39719.1 shall not be included.

~~SEC. 13. Section 21080.37 of the Public Resources Code is amended to read:~~

~~21080.37. (a) This division does not apply to a project or an activity to repair, maintain, or make minor alterations to an existing roadway if all of the following conditions are met:~~

~~(1) (A) The project does not cross a waterway.~~

~~(B) For purposes of this paragraph, "waterway" means a bay, estuary, lake, pond, river, slough, or a perennial, intermittent, or ephemeral stream, lake, or estuarine-marine shoreline.~~

~~(2) The project involves negligible or no expansion of an existing use beyond that existing at the time of the lead agency's determination.~~

~~(3) (A) The site of the project does not contain wetlands or riparian areas and does not have significant value as a wildlife habitat, and the project does not harm any species protected by the federal Endangered Species Act of 1973 (16 U.S.C. Sec. 1531 et seq.), the Native Plant Protection Act (Chapter 10 (commencing with Section 1900) of Division 2 of the Fish and Game Code), or the California Endangered Species Act (Chapter 1.5 (commencing with Section 2050) of Division 3 of the Fish and Game Code), and the project does not cause the destruction or removal of any species protected by a local ordinance.~~

~~(B) For the purposes of this paragraph:~~

~~(i) "Riparian areas" mean those areas transitional between terrestrial and aquatic ecosystems and that are distinguished by gradients in biophysical conditions, ecological processes, and biota. A riparian area is an area through which surface and subsurface hydrology connect waterbodies with their adjacent uplands. A riparian area includes those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems. A riparian area is adjacent to perennial, intermittent, and ephemeral streams, lakes, and estuarine-marine shorelines.~~

~~(ii) "Significant value as a wildlife habitat" includes wildlife habitat of national, statewide, regional, or local importance; habitat for species protected by the federal Endangered Species Act of 1973 (16 U.S.C. Sec. 1531 et seq.), the California Endangered Species Act (Chapter 1.5 (commencing with Section 2050) of Division 3 of the Fish and Game Code), or the Native Plant Protection Act (Chapter 10 (commencing with Section 1900) of Division 2 of the Fish and Game Code); habitat identified as candidate, fully protected, sensitive, or species of special status~~

~~by local, state, or federal agencies; or habitat essential to the movement of resident or migratory wildlife.~~

~~(iii) "Wetlands" has the same meaning as in the United States Fish and Wildlife Service Manual, Part 660 FW 2 (June 21, 1993).~~

~~(iv) "Wildlife habitat" means the ecological communities upon which wild animals, birds, plants, fish, amphibians, and invertebrates depend for their conservation and protection.~~

~~(4) The project does not impact cultural resources.~~

~~(5) The roadway does not affect scenic resources, as provided pursuant to subdivision (c) of Section 21084.~~

~~(b) Prior to determining that a project is exempt pursuant to this section, the lead agency shall do both of the following:~~

~~(1) Include measures in the project to mitigate potential vehicular traffic and safety impacts and bicycle and pedestrian safety impacts.~~

~~(2) Hold a noticed public hearing on the project to hear and respond to public comments. The hearing on the project may be conducted with another noticed lead agency public hearing. Publication of the notice shall be no fewer times than required by Section 6061 of the Government Code, by the public agency in a newspaper of general circulation in the area.~~

~~(c) For purposes of this section, "roadway" means a roadway as defined pursuant to Section 530 of the Vehicle Code and the previously graded and maintained shoulder that is within a roadway right-of-way of no more than five feet from the edge of the roadway.~~

~~(d) (1) If a state agency determines that a project is not subject to this division pursuant to this section and it approves or determines to carry out that project, it shall file a notice with the Office of Planning and Research in the manner specified in subdivisions (b) and (c) of Section 21108.~~

~~(2) If a local agency determines that a project is not subject to this division pursuant to this section and it approves or determines to carry out that project, it shall file a notice with the Office of Planning and Research, and with the county clerk in the county in which the project will be located in the manner specified in subdivisions (b) and (c) of Section 21152.~~

SEC. 13. Section 21080.37 of the Public Resources Code is amended to read:

21080.37. (a) This division does not apply to a project or an activity to repair, maintain, or make minor alterations to an existing roadway if all of the following conditions are met:

(1) The project is carried out by a city or county ~~with a population of less than 100,000 persons~~ to improve public safety.

(2) (A) The project does not cross a waterway.

(B) For purposes of this paragraph, "waterway" means a bay, estuary, lake, pond, river, slough, or a perennial, intermittent, or ephemeral stream, lake, or estuarine-marine shoreline.

(3) The project involves negligible or no expansion of an existing use beyond that existing at the time of the lead agency's determination.

(4) The roadway is not a state roadway.

(5) (A) The site of the project does not contain wetlands or riparian areas and does not have significant value as a wildlife habitat, and the project does not harm any species protected by the federal Endangered Species Act of 1973 (16 U.S.C. Sec. 1531 et seq.), the Native Plant Protection Act (Chapter 10 (commencing with Section 1900) of Division 2 of the Fish and Game Code), or the California Endangered Species Act (Chapter 1.5 (commencing with Section 2050) of Division 3 of the Fish and Game Code), and the project does not cause the destruction or removal of any species protected by a local ordinance.

(B) For the purposes of this paragraph:

(i) "Riparian areas" mean those areas transitional between terrestrial and aquatic ecosystems and that are distinguished by gradients in biophysical conditions, ecological processes, and biota. A riparian area is an area through which surface and subsurface hydrology connect waterbodies with their adjacent uplands. A riparian area includes those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems. A riparian area is adjacent to perennial, intermittent, and ephemeral streams, lakes, and estuarine-marine shorelines.

(ii) "Significant value as a wildlife habitat" includes wildlife habitat of national, statewide, regional, or local importance; habitat for species protected by the federal Endangered Species Act of 1973 (16 U.S.C. Sec. 1531, et seq.), the California Endangered Species Act (Chapter 1.5 (commencing with Section 2050) of Division 3 of the Fish and Game Code), or the Native Plant Protection Act (Chapter 10 (commencing with Section 1900) of

Division 2 of the Fish and Game Code); habitat identified as candidate, fully protected, sensitive, or species of special status by local, state, or federal agencies; or habitat essential to the movement of resident or migratory wildlife.

(iii) "Wetlands" has the same meaning as in the United States Fish and Wildlife Service Manual, Part 660 FW 2 (June 21, 1993).

(iv) "Wildlife habitat" means the ecological communities upon which wild animals, birds, plants, fish, amphibians, and invertebrates depend for their conservation and protection.

(6) The project does not impact cultural resources.

(7) The roadway does not affect scenic resources, as provided pursuant to subdivision (c) of Section 21084.

(b) Prior to determining that a project is exempt pursuant to this section, the lead agency shall do both of the following:

(1) Include measures in the project to mitigate potential vehicular traffic and safety impacts and bicycle and pedestrian safety impacts.

(2) Hold a noticed public hearing on the project to hear and respond to public comments. The hearing on the project may be conducted with another noticed lead agency public hearing. Publication of the notice shall be no fewer times than required by Section 6061 of the Government Code, by the public agency in a newspaper of general circulation in the area.

(c) For purposes of this section, "roadway" means a roadway as defined pursuant to Section 530 of the Vehicle Code and the previously graded and maintained shoulder that is within a roadway right-of-way of no more than five feet from the edge of the roadway.

(d) Whenever a local agency determines that a project is not subject to this division pursuant to this section, and it approves or determines to carry out that project, the local agency shall file a notice with the Office of Planning and Research, and with the county clerk in the county in which the project will be located in the manner specified in subdivisions (b) and (c) of Section 21152.

(e) This section shall remain in effect only until January 1, ~~2020,~~ *2023,* and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, ~~2020,~~ *2023,* deletes or extends that date.

SEC. 14. Division 13.6 (commencing with Section 21200) is added to the Public Resources Code, to read:

DIVISION 13.6. ADVANCE MITIGATION PROGRAM ACT

Chapter 1. General

21200. This division shall be known, and may be cited, as the Advance Mitigation Program Act.

21201. (a) The purpose of this division is to improve the success and effectiveness of actions implemented to mitigate the natural resource impacts of future transportation improvements by designing those actions to measurably advance regional or statewide conservation priorities and by establishing the means to implement the actions well before the impacts occur. The advance design and implementation of mitigation actions also will streamline the delivery of transportation improvements by avoiding or reducing delays associated with environmental permitting.

(b) This division is not intended to create a new environmental permitting or regulatory program or to modify existing environmental laws or regulations, nor is it expected that all mitigation requirements will be addressed for planned transportation improvements. Instead, it is intended to provide a methodology with which to fulfill the requirements of existing state and federal environmental laws that protect fish, wildlife, plant species, and other natural resources more efficiently and effectively.

21202. The Legislature finds and declares all of the following:

(a) Compensatory mitigation for environmental impacts is ordinarily handled on a project-by-project basis, usually near the end of a project's timeline and often with insufficient guidance regarding regional or statewide conservation priorities.

(b) The cost of critical transportation improvements often escalates because of permitting delays that occur when appropriate conservation and mitigation measures cannot easily be identified and because the cost of these measures often increases between the time a project is planned and funded and the time mitigation is implemented.

(c) When the Department of Transportation is able to anticipate the compensatory mitigation needs for planned transportation improvements, it can meet those needs in a more timely and cost-effective way by using advance mitigation planning.

(d) Working with state and federal resource protection agencies, the department can generate and pool a range of mitigation credits for use for transportation improvements, taking advantage of greater economies of scale and allowing public funds to stretch further. By making those mitigation credits available in advance of environmental impacts and project permitting, transportation agencies can avoid permitting delays that result from project-by-project identification and development of mitigation measures.

(e) Advance mitigation can provide an effective means of facilitating delivery of transportation improvements while ensuring more effective natural resource conservation.

(f) Advance mitigation is needed to direct mitigation funding for transportation improvements to agreed-upon conservation priorities and to the creation of habitat reserves and recreation areas that enhance the sustainability of human and natural systems by protecting or restoring connectivity of natural communities and the delivery of ecosystem services.

(g) Advance mitigation can facilitate the implementation of climate change adaptation strategies both for ecosystems and California's economy.

(h) Advance mitigation can enable the state to protect, restore, and recover its natural resources as it strengthens and improves its transportation systems.

21203. The Legislature intends to do all of the following by enacting this division:

(a) Facilitate delivery of transportation improvements while ensuring more effective natural resource conservation.

(b) Develop effective strategies to improve the state's ability to meet mounting demands for transportation improvements and to maximize conservation and other public benefits.

(c) Achieve conservation objectives of statewide and regional importance by coordinating local, state, and federally funded natural resource conservation efforts with mitigation actions required for impacts from transportation improvements.

(d) Create administrative, governance, and financial incentives and mechanisms necessary to ensure that measures required to minimize or mitigate impacts from transportation improvements will serve to achieve regional or statewide natural resource conservation objectives.

Chapter 2. Definitions

21204. For purposes of this division, the following terms have the following meanings:

(a) "Acquire" and "acquisition" mean, with respect to land or a waterway, acquisition of fee title or purchase of a conservation easement, that protects conservation and mitigation values on the land or waterway in perpetuity.

(b) "Advance mitigation" means mitigation implemented before, and in anticipation of, environmental effects of planned transportation improvements.

(c) "Commission" means the California Transportation Commission.

(d) "Conservation easement" means a perpetual conservation easement that complies with Chapter 4 (commencing with Section 815) of Title 2 of Part 2 of Division 2 of the Civil Code.

(e) "Department" means the Department of Transportation.

(f) "Mitigation credit agreement" means a mitigation credit agreement pursuant to Chapter 9 (commencing with Section 1850) of Division 2 of the Fish and Game Code.

(g) "Transportation agency" means the department, the High-Speed Rail Authority, a metropolitan planning organization, a regional transportation planning agency, or another public agency that implements transportation improvements.

(h) "Transportation improvement" means a transportation capital improvement project.

(i) "Planned transportation improvement" means a transportation project that a transportation agency has identified in a regional transportation plan, an interregional transportation plan, a capital improvement program, or other approved transportation planning document. A planned transportation improvement may include, but is not limited to, a transportation project that has been proposed for approval or that has been approved.

(j) "Program" means the Advance Mitigation Program implemented pursuant to this division.

(k) "Regional conservation investment strategy" means a regional conservation investment strategy *approved by the Department of Fish and Wildlife* pursuant to Chapter 9 (commencing with Section 1850) of Division 2 of the Fish and Game Code.

(*l*) "Regulatory agency" means a state or federal natural resource protection agency with regulatory authority over planned transportation improvements. A regulatory agency includes, but is not limited to, the Natural Resources Agency, the Department of Fish and Wildlife, California regional water quality control boards, the United States Fish and Wildlife Service, the National Marine Fisheries Service, the United States Environmental Protection Agency, and the United States Army Corps of Engineers.

Chapter 3. Advance Mitigation Program

21205. (a) The Advance Mitigation Program is hereby created in the department to accelerate project delivery and improve environmental outcomes of environmental mitigation for planned transportation improvements. The department may do any of the following to administer and implement the program:

(1) Purchase credits at mitigation banks and conservation banks approved by one or more regulatory agencies. The department may also establish mitigation banks or conservation banks, or fund the establishment of mitigation banks or conservation banks, in accordance with applicable state and federal standards if the department determines that those banks would provide biologically appropriate mitigation for planned transportation improvements identified pursuant to Section 21207.

(2) Pay mitigation fees under natural community conservation plans approved pursuant to Chapter 10 (commencing with Section 2800) of Division 3 of the Fish and Game Code, or habitat conservation plans approved in accordance with the federal Endangered Species Act.

(3) Prepare, or fund the preparation of, regional conservation investment strategies. Where a regional conservation framework has been approved by the Department of Fish and Wildlife, the department may do the following:

(A) Enter into a mitigation credit agreement with the Department of Fish and Wildlife, and acquire, restore, manage, monitor, protect, and preserve lands, waterways, aquatic resources or fisheries, or fund the acquisition, restoration, management, monitoring, protection, and preservation of lands, waterways, aquatic resources,

or fisheries, as needed to generate mitigation credits pursuant to those mitigation credit agreements.

(B) Acquire, restore, manage, monitor, and preserve lands, waterways, aquatic resources, or fisheries, or fund the acquisition, restoration, management, monitoring, and preservation of lands, waterways, aquatic resources, or fisheries that would measurably advance a conservation objective in the regional conservation investment strategy if the department concludes that the action or actions could conserve or create environmental values that are appropriate to mitigate the anticipated potential impacts of planned transportation improvements.

(4) Prepare, or fund the preparation of, regional advance mitigation plans *that are consistent with a regional conservation strategy and are approved by the Department of Fish and Wildlife,* within the area of ~~any~~ *that* regional conservation investment ~~strategy that has been approved by the Department of Fish and Wildlife.~~ *strategy.* The purpose of a regional advance mitigation plan shall be to identify potential mitigation needs for planned transportation improvements, to facilitate the acquisition or generation of mitigation credits and values that could be used to fulfill those needs and thereby to avoid delays in the environmental permitting of those transportation improvements. A regional advance mitigation plan shall do all of the following:

(A) Use the information and analysis in the regional conservation investment strategy to estimate the nature and extent of potential mitigation requirements of planned transportation improvements on a regional or statewide basis.

(B) Consider the full range of potential impacts on natural resources of planned transportation improvements.

(C) Identify available mitigation credits at mitigation banks or conservation banks approved by one or more regulatory agencies that could be used to mitigate the impacts of planned transportation improvements.

(D) Assess whether, and to what extent, mitigation requirements for planned transportation improvements could be fulfilled by the payment of mitigation fees under approved natural community conservation plans and habitat conservation plans.

(E) Assess whether, and to what extent, mitigation requirements for planned transportation improvements could be fulfilled by mitigation credits created under a mitigation credit agreement.

(F) Assess whether conservation actions or habitat enhancements that would measurably advance an unmet conservation objective in the regional conservation investment strategy could conserve or create environmental values that are appropriate to mitigate the anticipated potential impacts of planned transportation improvements and could fulfill mitigation requirements resulting from those impacts.

(G) Analyze the cost-effectiveness of available mitigation alternatives both in terms of environmental benefits and improved project delivery and certainty.

(b) The department shall track all advance mitigation actions implemented and all mitigation credits generated under the program for environmental mitigation for transportation improvements.

(c) The department may use mitigation credits to fulfill mitigation requirements of a transportation improvement eligible for the State Transportation Improvement Program or the State Highway Operation and Protection Program.

(d) The department may use, or allow local or state transportation agencies to use, mitigation credits or values generated or obtained under the program to fulfill the mitigation requirements of planned transportation improvements if the applicable transportation agency reimburses the program for all costs of purchasing or creating the mitigation credits or values, as determined by the department. Those costs shall be calculated using total cost accounting and shall include, as applicable, land acquisition or conservation easement costs, monitoring and enforcement costs, restoration costs, transaction costs, administrative costs, contingency costs, and land management, monitoring, and protection costs.

(e) Prior to approving a regional conservation investment strategy or regional advance mitigation plan, the Department of Fish and Wildlife shall receive public comments on the strategy or plan for at least 45 days and shall hold a public meeting at relevant districts of the department affected by the strategy or plan. The Department of Fish and Wildlife, in cooperation with the department, shall respond to any public comments received.

(f) The department, in collaboration with the Department of Fish and Wildlife, shall establish and maintain an Internet Web site that includes all of the following:

(1) Findings and recommendations of the transportation advance mitigation steering committee established pursuant to Section 21206.

(2) Any proposed actions taken pursuant to the program, including information specified in subdivision (b).

(3) Any public comments and responses made pursuant to subdivision (e).

(4) The reports required pursuant to Section 21209.

21206. *(a)* No later than February 1, ~~2017,~~ *2018,* the department shall establish an interagency transportation advance mitigation steering committee consisting of the department and appropriate state and federal regulatory ~~agencies~~ *agencies, including the Natural Resources Agency and the Department of Fish and Wildlife,* to support the program so that advance mitigation can be used as required mitigation for planned transportation improvements and can provide improved environmental outcomes. The committee shall advise the department of opportunities to carry out advance mitigation improvements, provide the best available science, and actively participate in mitigation instrument reviews and approvals. The committee shall seek to develop streamlining opportunities, including those related to landscape scale mitigation planning and alignment of federal and state regulations and procedures related to mitigation requirements and implementation. The committee shall also provide input on crediting, using, and tracking of advance mitigation investments.

(b) The committee shall hold annually at least three meetings, one in northern California, one in the central valley region, and one in southern California, to solicit public input on the program.

21207. The Advance Mitigation Fund is hereby created in the State Transportation Fund as a revolving fund. Notwithstanding Section 13340 of the Government Code, the fund shall be continuously appropriated without regard to fiscal years. The moneys in the fund shall be programmed by the commission for the planning and implementation of advance mitigation improvements consistent with the purposes of this chapter. After the transfer of moneys to the fund for four fiscal years pursuant to subdivision (c) of Section 2032 of the Streets and Highways Code, commencing in the 2017–18 fiscal year, the program is intended to be self-sustaining. Advance expenditures from the fund shall

later be reimbursed from project funding available at the time a planned transportation improvement is constructed. A maximum of 5 percent of available funds may be used for administrative purposes.

21208. The program is intended to improve the efficiency and efficacy of mitigation only and is not intended to supplant the requirements of the California Environmental Quality Act (Division 13 (commencing with Section 21000)) or any other environmental law. The identification of planned transportation improvements and of mitigation improvements or measures for planned transportation improvements under this division does not imply or require approval of those improvements for purposes of the California Environmental Quality Act (Division 13 (commencing with Section 21000)) or any other environmental law.

21209. (a) On or before January 1, 2019, and annually thereafter, the department, in collaboration with the Department of Fish and Wildlife, shall submit to the Legislature, pursuant to Section 9795 of the Government Code, a report on the operation of the program that contains both of the following information:

(1) Funding used to generate the mitigation credits and the amount of credits used for each transportation improvement during the past calendar year.

(2) The reasons or justifications for using the program to mitigate the impacts of the planned transportation improvements and the type of advance mitigation used.

(b) On or before January 1, 2022, the department, in collaboration with the Department of Fish and Wildlife, shall submit to the Legislature, pursuant to Section 9795 of the Government Code, a report that includes all of the following information:

(1) Findings on the efficacy of the program and recommendations for improving program outcomes.

(2) Data on the funding used for the generation of the mitigation credits and the use of the mitigation credits.

(3) Data on planned transportation improvements benefited by the program, including the mitigation credits used in lieu of onsite mitigation.

(4) Data on monitoring.

21210. This division shall remain in effect only until January 1, 2023, and as of that date is repealed, unless a later enacted

statute that is enacted before January 1, 2023, deletes or extends that date.

SEC. 15. Section 99312.1 of the Public Utilities Code is amended to read:

99312.1. (a) Revenues transferred to the Public Transportation Account pursuant to Sections 6051.8 and 6201.8 of the Revenue and Taxation Code for the State Transit Assistance Program are hereby continuously appropriated to the Controller for allocation as follows:

(1) Fifty percent for allocation to transportation planning agencies, county transportation commissions, and the San Diego Metropolitan Transit Development Board pursuant to Section 99314.

(2) Fifty percent for allocation to transportation agencies, county transportation commissions, and the San Diego Metropolitan Transit Development Board for purposes of Section 99313.

(b) For purposes of this chapter, the revenues allocated pursuant to this section shall be subject to the same requirements as revenues allocated pursuant to subdivisions (b) and (c), as applicable, of Section 99312.

(c) The revenues transferred to the Public Transportation Account for the State Transit Assistance Program that are attributable to the increase in the sales and use tax on diesel fuel pursuant to subdivision (b) of Section 6051.8 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, and subdivision (b) of Section 6201.8 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, upon allocation pursuant to Sections 99313 and 99314, shall only be expended on the following:

(1) Transit capital projects or services to maintain or repair a transit operator's existing transit vehicle fleet or existing transit facilities, including rehabilitation or modernization of existing vehicles or facilities.

(2) The design, acquisition, and construction of new vehicles or facilities that improve existing transit services.

(3) Transit services that complement local efforts for repair and improvement of local transportation infrastructure.

(d) (1) Prior to receiving an apportionment of funds pursuant to subdivision (c) from the Controller in a fiscal year, a recipient transit agency shall submit to the Department of Transportation a

list of projects proposed to be funded with these funds. The list of projects proposed to be funded with these funds shall include a description and location of each proposed project, a proposed schedule for the project's completion, and the estimated useful life of the improvement. The project list shall not limit the flexibility of a recipient transit agency to fund projects in accordance with local needs and priorities so long as the projects are consistent with subdivision (c).

(2) The department shall report to the Controller the recipient transit agencies that have submitted a list of projects as described in this subdivision and that are therefore eligible to receive an apportionment of funds for the applicable fiscal year. The Controller, upon receipt of the report, shall apportion funds pursuant to Sections 99313 and 99314.

(e) For each fiscal year, each recipient transit agency receiving an apportionment of funds pursuant to subdivision (c) shall, upon expending those funds, submit documentation to the department that includes a description and location of each completed project, the amount of funds expended on the project, the completion date, and the estimated useful life of the improvement.

(f) The audit of transit operator finances required pursuant to Section 99245 shall verify that the revenues identified in subdivision (c) have been expended in conformance with these specific requirements and all other generally applicable requirements.

SEC. 16. Section 6051.8 of the Revenue and Taxation Code is amended to read:

6051.8. (a) Except as provided by Section 6357.3, in addition to the taxes imposed by this part, for the privilege of selling tangible personal property at retail a tax is hereby imposed upon all retailers at the rate of 1.75 percent of the gross receipts of any retailer from the sale of all diesel ~~fuel.~~ *fuel, as defined in Section 60022.*

(b) Except as provided by Section 6357.3, in addition to the taxes imposed by this part and by subdivision (a), for the privilege of selling tangible personal property at retail a tax is hereby imposed upon all retailers at the rate of 4 percent of the gross receipts of any retailer from the sale of all diesel fuel, as defined in Section 60022, sold at retail in this state.

(c) Beginning July 1, 2020, and every third year thereafter, the State Board of Equalization shall recompute the rates of the taxes imposed by this section. That computation shall be made as follows:

(1) The Department of Finance shall transmit to the State Board of Equalization the percentage change in the California Consumer Price Index for all items from November of three calendar years prior to November of the prior calendar year, no later than January 31, 2020, and January 31 of every third year thereafter.

(2) The State Board of Equalization shall do all of the following:

(A) Compute an inflation adjustment factor by adding 100 percent to the percentage change figure that is furnished pursuant to paragraph (1) and dividing the result by 100.

(B) Multiply the preceding tax rate per gallon by the inflation adjustment factor determined in subparagraph (A) and round off the resulting product to the nearest tenth of a cent.

(C) Make its determination of the new rate no later than March 1 of the same year as the effective date of the new rate.

(d) (1) Notwithstanding subdivision (b) of Section 7102, except as otherwise provided in paragraph (2), all of the revenues, less refunds, collected pursuant to this section shall be estimated by the State Board of Equalization, with the concurrence of the Department of Finance, and transferred quarterly to the Public Transportation Account in the State Transportation Fund for allocation under the State Transit Assistance Program pursuant to Section 99312.1 of the Public Utilities Code.

(2) The revenues, less refunds, attributable to a rate of 0.5 percent of the 4-percent increase in the rate pursuant to subdivision (b), amounting to one-eighth of revenues from the increase in the rate under that subdivision, shall be estimated by the State Board of Equalization, with the concurrence of the Department of Finance, and transferred quarterly to the Public Transportation Account in the State Transportation Fund for allocation to the Department of Transportation, upon appropriation by the Legislature, to intercity rail and commuter rail purposes pursuant to Section 99315 of the Public Utilities Code.

SEC. 17. Section 6201.8 of the Revenue and Taxation Code is amended to read:

6201.8. (a) Except as provided by Section 6357.3, in addition to the taxes imposed by this part, an excise tax is hereby imposed

on the storage, use, or other consumption in this state of diesel fuel, as defined in Section 60022, at the rate of 1.75 percent of the sales price of the diesel fuel.

(b) Except as provided by Section 6357.3, in addition to the taxes imposed by this part and by subdivision (a), an excise tax is hereby imposed on the storage, use, or other consumption in this state of diesel fuel, as defined in Section 60022, at the rate of 4 percent of the sales price of the diesel fuel.

(c) Beginning July 1, 2020, and every third year thereafter, the State Board of Equalization shall recompute the rates of the taxes imposed by this section. That computation shall be made as follows:

(1) The Department of Finance shall transmit to the State Board of Equalization the percentage change in the California Consumer Price Index for all items from November of three calendar years prior to November of the prior calendar year, no later than January 31, 2020, and January 31 of every third year thereafter.

(2) The State Board of Equalization shall do all of the following:

(A) Compute an inflation adjustment factor by adding 100 percent to the percentage change figure that is furnished pursuant to paragraph (1) and dividing the result by 100.

(B) Multiply the preceding tax rate per gallon by the inflation adjustment factor determined in subparagraph (A) and round off the resulting product to the nearest tenth of a cent.

(C) Make its determination of the new rate no later than March 1 of the same year as the effective date of the new rate.

(d) (1) Notwithstanding subdivision (b) of Section 7102, except as otherwise provided in paragraph (2), all of the revenues, less refunds, collected pursuant to this section shall be estimated by the State Board of Equalization, with the concurrence of the Department of Finance, and transferred quarterly to the Public Transportation Account in the State Transportation Fund for allocation pursuant to Section 99312.1 of the Public Utilities Code.

(2) The revenues, less refunds, attributable to a rate of 0.5 percent of the 4-percent increase in the rate pursuant to subdivision (b), amounting to one-eighth of revenues from the increase in the rate under that subdivision, shall be estimated by the State Board of Equalization, with the concurrence of the Department of Finance, and transferred quarterly to the Public Transportation Account in the State Transportation Fund for allocation to the Department of

Transportation, upon appropriation by the Legislature, to intercity rail and commuter rail purposes pursuant to Section 99315 of the Public Utilities Code.

SEC. 18. Section 7360 of the Revenue and Taxation Code is amended to read:

7360. (a) (1) (A) A tax of eighteen cents ($0.18) is hereby imposed upon each gallon of fuel subject to the tax in Sections 7362, 7363, and 7364.

(B) In addition to the tax imposed pursuant to subparagraph (A), a tax of six cents ($0.06) is hereby imposed upon each gallon of fuel, other than aviation gasoline, subject to the tax in Sections 7362, 7363, and 7364. Effective one year after the date that the six-cent ($0.06) tax is imposed, an additional tax of three cents ($0.03) is hereby imposed, and effective two years after the date that the six-cent ($0.06) tax is imposed, an additional tax of three cents ($0.03) is hereby imposed, on each gallon of fuel, other than aviation gasoline, subject to the tax in Sections 7362, 7363, and 7364.

(2) If the federal fuel tax is reduced below the rate of nine cents ($0.09) per gallon and federal financial allocations to this state for highway and exclusive public mass transit guideway purposes are reduced or eliminated correspondingly, the tax rate imposed by subparagraph (A) of paragraph (1), on and after the date of the reduction, shall be recalculated by an amount so that the combined state rate under subparagraph (A) of paragraph (1) and the federal tax rate per gallon equal twenty-seven cents ($0.27).

(3) If any person or entity is exempt or partially exempt from the federal fuel tax at the time of a reduction, the person or entity shall continue to be so exempt under this section.

(b) On and after July 1, 2010, in addition to the tax imposed by subdivision (a), a tax is hereby imposed upon each gallon of motor vehicle fuel, other than aviation gasoline, subject to the tax in Sections 7362, 7363, and 7364 in an amount equal to seventeen and three-tenths cents ($0.173) per gallon.

(c) Beginning July 1, 2020, and every third year thereafter, the State Board of Equalization shall recompute the rates of the taxes imposed by this section. That computation shall be made as follows:

(1) The Department of Finance shall transmit to the State Board of Equalization the percentage change in the California Consumer

Price Index for all items from November of three calendar years prior to November of the prior calendar year, no later than January 31, 2020, and January 31 of every third year thereafter.

(2) The State Board of Equalization shall do all of the following:

(A) Compute an inflation adjustment factor by adding 100 percent to the percentage change figure that is furnished pursuant to paragraph (1) and dividing the result by 100.

(B) Multiply the preceding tax rate per gallon by the inflation adjustment factor determined in subparagraph (A) and round off the resulting product to the nearest tenth of a cent.

(C) Make its determination of the new rate no later than March 1 of the same year as the effective date of the new rate.

SEC. 19. Section 8352.4 of the Revenue and Taxation Code is amended to read:

8352.4. (a) Subject to Sections 8352 and 8352.1, and except as otherwise provided in subdivision (b), there shall be transferred from the money deposited to the credit of the Motor Vehicle Fuel Account to the Harbors and Watercraft Revolving Fund, for expenditure in accordance with Division 1 (commencing with Section 30) of the Harbors and Navigation Code, the sum of six million six hundred thousand dollars ($6,600,000) per annum, representing the amount of money in the Motor Vehicle Fuel Account attributable to taxes imposed on distributions of motor vehicle fuel used or usable in propelling vessels. The actual amount shall be calculated using the annual reports of registered boats prepared by the Department of Motor Vehicles for the United States Coast Guard and the formula and method of the December 1972 report prepared for this purpose and submitted to the Legislature on December 26, 1972, by the Director of Transportation. If the amount transferred during each fiscal year is in excess of the calculated amount, the excess shall be retransferred from the Harbors and Watercraft Revolving Fund to the Motor Vehicle Fuel Account. If the amount transferred is less than the amount calculated, the difference shall be transferred from the Motor Vehicle Fuel Account to the Harbors and Watercraft Revolving Fund. No adjustment shall be made if the computed difference is less than fifty thousand dollars ($50,000), and the amount shall be adjusted to reflect any temporary or permanent increase or decrease that may be made in the rate under the Motor

Vehicle Fuel Tax Law. Payments pursuant to this section shall be made prior to payments pursuant to Section 8352.2.

(b) (1) Commencing July 1, 2017, the revenues attributable to the taxes imposed pursuant to subdivision (b) of Section 7360 and otherwise to be deposited in the Harbors and Watercraft Revolving Fund pursuant to subdivision (a) shall instead be transferred to the Highway Users Tax Account for distribution pursuant to Section 2103.1 of the Streets and Highways Code.

(2) Commencing July 1, 2017, the revenues attributable to the taxes imposed pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 7360 and otherwise to be deposited in the Harbors and Watercraft Revolving Fund pursuant to subdivision (a) shall instead be transferred to the Road Maintenance and Rehabilitation Account pursuant to Section 2031 of the Streets and Highways Code.

SEC. 20. Section 8352.5 of the Revenue and Taxation Code is amended to read:

8352.5. (a) (1) Subject to Sections 8352 and 8352.1, and except as otherwise provided in subdivision (b), there shall be transferred from the money deposited to the credit of the Motor Vehicle Fuel Account to the Department of Food and Agriculture Fund, during the second quarter of each fiscal year, an amount equal to the estimate contained in the most recent report prepared pursuant to this section.

(2) The amounts are not subject to Section 6357 with respect to the collection of sales and use taxes thereon, and represent the portion of receipts in the Motor Vehicle Fuel Account during a calendar year that were attributable to agricultural off-highway use of motor vehicle fuel which is subject to refund pursuant to Section 8101, less gross refunds allowed by the Controller during the fiscal year ending June 30 following the calendar year to persons entitled to refunds for agricultural off-highway use pursuant to Section 8101. Payments pursuant to this section shall be made prior to payments pursuant to Section 8352.2.

(b) (1) Commencing July 1, 2017, the revenues attributable to the taxes imposed pursuant to subdivision (b) of Section 7360 and otherwise to be deposited in the Department of Food and Agriculture Fund pursuant to subdivision (a) shall instead be transferred to the Highway Users Tax Account for distribution pursuant to Section 2103.1 of the Streets and Highways Code.

(2) Commencing July 1, 2017, the revenues attributable to the taxes imposed pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 7360 and otherwise to be deposited in the Department of Food and Agriculture Fund pursuant to subdivision (a) shall instead be transferred to the Road Maintenance and Rehabilitation Account pursuant to Section 2031 of the Streets and Highways Code.

(c) On or before September 30, 2012, and on or before September 30 of each even-numbered year thereafter, the Director of Transportation and the Director of Food and Agriculture shall jointly prepare, or cause to be prepared, a report setting forth the current estimate of the amount of money in the Motor Vehicle Fuel Account attributable to agricultural off-highway use of motor vehicle fuel, which is subject to refund pursuant to Section 8101 less gross refunds allowed by the Controller to persons entitled to refunds for agricultural off-highway use pursuant to Section 8101; and they shall submit a copy of the report to the Legislature.

SEC. 21. Section 8352.6 of the Revenue and Taxation Code is amended to read:

8352.6. (a) (1) Subject to Section 8352.1, and except as otherwise provided in paragraphs (2) and (3), on the first day of every month, there shall be transferred from moneys deposited to the credit of the Motor Vehicle Fuel Account to the Off-Highway Vehicle Trust Fund created by Section 38225 of the Vehicle Code an amount attributable to taxes imposed upon distributions of motor vehicle fuel used in the operation of motor vehicles off highway and for which a refund has not been claimed. Transfers made pursuant to this section shall be made prior to transfers pursuant to Section 8352.2.

(2) (A) Commencing July 1, 2017, the revenues attributable to the taxes imposed pursuant to subdivision (b) of Section 7360 and otherwise to be deposited in the Off-Highway Vehicle Trust Fund pursuant to paragraph (1) shall instead be transferred to the Highway Users Tax Account for distribution pursuant to Section 2103.1 of the Streets and Highways Code.

(B) Commencing July 1, 2017, the revenues attributable to the taxes imposed pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 7360 and otherwise to be deposited in the Off-Highway Vehicle Trust Fund pursuant to subdivision (a) shall instead be transferred to the Road Maintenance and

Rehabilitation Account pursuant to Section 2031 of the Streets and Highways Code.

(3) The Controller shall withhold eight hundred thirty-three thousand dollars ($833,000) from the monthly transfer to the Off-Highway Vehicle Trust Fund pursuant to paragraph (1), and transfer that amount to the General Fund.

(b) The amount transferred to the Off-Highway Vehicle Trust Fund pursuant to paragraph (1) of subdivision (a), as a percentage of the Motor Vehicle Fuel Account, shall be equal to the percentage transferred in the 2006–07 fiscal year. Every five years, starting in the 2013–14 fiscal year, the percentage transferred may be adjusted by the Department of Transportation in cooperation with the Department of Parks and Recreation and the Department of Motor Vehicles. Adjustments shall be based on, but not limited to, the changes in the following factors since the 2006–07 fiscal year or the last adjustment, whichever is more recent:

(1) The number of vehicles registered as off-highway motor vehicles as required by Division 16.5 (commencing with Section 38000) of the Vehicle Code.

(2) The number of registered street-legal vehicles that are anticipated to be used off highway, including four-wheel drive vehicles, all-wheel drive vehicles, and dual-sport motorcycles.

(3) Attendance at the state vehicular recreation areas.

(4) Off-highway recreation use on federal lands as indicated by the United States Forest Service's National Visitor Use Monitoring and the United States Bureau of Land Management's Recreation Management Information System.

(c) It is the intent of the Legislature that transfers from the Motor Vehicle Fuel Account to the Off-Highway Vehicle Trust Fund should reflect the full range of motorized vehicle use off highway for both motorized recreation and motorized off-road access to other recreation opportunities. Therefore, the Legislature finds that the fuel tax baseline established in subdivision (b), attributable to off-highway estimates of use as of the 2006–07 fiscal year, accounts for the three categories of vehicles that have been found over the years to be users of fuel for off-highway motorized recreation or motorized access to nonmotorized recreational pursuits. These three categories are registered off-highway motorized vehicles, registered street-legal motorized vehicles used off highway, and unregistered off-highway motorized vehicles.

(d) It is the intent of the Legislature that the off-highway motor vehicle recreational use to be determined by the Department of Transportation pursuant to paragraph (2) of subdivision (b) be that usage by vehicles subject to registration under Division 3 (commencing with Section 4000) of the Vehicle Code, for recreation or the pursuit of recreation on surfaces where the use of vehicles registered under Division 16.5 (commencing with Section 38000) of the Vehicle Code may occur.

(e) In the 2014–15 fiscal year, the Department of Transportation, in consultation with the Department of Parks and Recreation and the Department of Motor Vehicles, shall undertake a study to determine the appropriate adjustment to the amount transferred pursuant to subdivision (b) and to update the estimate of the amount attributable to taxes imposed upon distributions of motor vehicle fuel used in the operation of motor vehicles off highway and for which a refund has not been claimed. The department shall provide a copy of this study to the Legislature no later than January 1, 2016.

SEC. 22. Section 60050 of the Revenue and Taxation Code is amended to read:

60050. (a) (1) A tax of thirteen cents ($0.13) is hereby imposed upon each gallon of diesel fuel subject to the tax in Sections 60051, 60052, and 60058.

(2) If the federal fuel tax is reduced below the rate of fifteen cents ($0.15) per gallon and federal financial allocations to this state for highway and exclusive public mass transit guideway purposes are reduced or eliminated correspondingly, the tax rate imposed by paragraph (1) shall be increased by an amount so that the combined state rate under paragraph (1) and the federal tax rate per gallon equal what it would have been in the absence of the federal reduction.

(3) If any person or entity is exempt or partially exempt from the federal fuel tax at the time of a reduction, the person or entity shall continue to be exempt under this section.

(b) In addition to the tax imposed pursuant to subdivision (a), an additional tax of twenty cents ($0.20) is hereby imposed upon each gallon of diesel fuel subject to the tax in Sections 60051, 60052, and 60058.

(c) Beginning July 1, 2020, and every third year thereafter, the State Board of Equalization shall recompute the rates of the taxes

imposed by this section. That computation shall be made as follows:

(1) The Department of Finance shall transmit to the State Board of Equalization the percentage change in the California Consumer Price Index for all items from November of three calendar years prior to November of the prior calendar year, no later than January 31, 2020, and January 31 of every third year thereafter.

(2) The State Board of Equalization shall do all of the following:

(A) Compute an inflation adjustment factor by adding 100 percent to the percentage change figure that is furnished pursuant to paragraph (1) and dividing the result by 100.

(B) Multiply the preceding tax rate per gallon by the inflation adjustment factor determined in subparagraph (A) and round off the resulting product to the nearest tenth of a cent.

(C) Make its determination of the new rate no later than March 1 of the same year as the effective date of the new rate.

SEC. 23. Section 183.1 of the Streets and Highways Code is amended to read:

183.1. Except as otherwise provided in Section 54237.7 of the Government Code, money deposited into the account that is not subject to Article XIX of the California Constitution, including, but not limited to, money that is derived from the sale of documents, charges for miscellaneous services to the public, condemnation deposits fund investments, rental of state property, or any other miscellaneous uses of property or money, shall be deposited in the Road Maintenance and Rehabilitation Account created pursuant to Section 2031.

SEC. 24. Section 820.1 is added to the Streets and Highways Code, to read:

820.1. (a) The State of California consents to the jurisdiction of the federal courts with regard to the compliance, discharge, or enforcement of the responsibilities assumed by the department pursuant to ~~Section 326 of, and subsection (a) of Section 327 of,~~ *Sections 326 and 327(a) of* Title 23 of the United States Code.

(b) In any action brought pursuant to the federal laws described in subdivision (a), no immunity from suit may be asserted by the department pursuant to the Eleventh Amendment to the United States Constitution, and any immunity is hereby waived.

(c) The department shall not delegate any of its responsibilities assumed pursuant to the federal laws described in subdivision (a) to any political subdivision of the state or its instrumentalities.

(d) Nothing in this section affects the obligation of the department to comply with state and federal law.

SEC. 25. Chapter 2 (commencing with Section 2030) is added to Division 3 of the Streets and Highways Code, to read:

Chapter 2. Road Maintenance and Rehabilitation Program

2030. (a) The Road Maintenance and Rehabilitation Program is hereby created to address deferred maintenance on the state highway system and the local street and road system. Funds made available by the program shall be prioritized for expenditure on basic road maintenance and road rehabilitation projects, and on critical safety projects. For funds appropriated pursuant to paragraph (1) of subdivision ~~(d)~~ *(e)* of Section 2032, the California Transportation Commission shall adopt performance criteria, consistent with the asset management plan required pursuant to *Section* 14526.4 of the Government Code, to ensure efficient use of the funds available for these purposes in the program.

(b) (1) Funds made available by the program shall be used for projects that include, but are not limited to, the following:

(A) Road maintenance and rehabilitation.

(B) Safety projects.

(C) Railroad grade separations.

(D) Complete street components, including active transportation purposes, pedestrian and bicycle safety projects, transit facilities, and drainage and stormwater capture projects in conjunction with any other allowable project.

(E) Traffic control devices.

(2) Funds made available by the program may also be used to satisfy a match requirement in order to obtain state or federal funds for projects authorized by this subdivision.

2031. The following revenues shall be deposited in the Road Maintenance and Rehabilitation Account, which is hereby created in the State Transportation Fund:

(a) Notwithstanding subdivision (b) of Section 2103, the portion of the revenues in the Highway Users Tax Account attributable to

the increases in the motor vehicle fuel excise tax pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 7360 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section.

(b) The portion of revenues attributable to the increase in the motor vehicle fuel excise tax pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 7360 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, and designated for the Road Maintenance and Rehabilitation Account pursuant to paragraph (2) of subdivision (b) of Section 8352.4 of, paragraph (2) of subdivision (b) of Section 8352.5 of, and subparagraph (B) paragraph (2) of subdivision (a) of Section 8352.6 of, that code.

(c) The revenues from the increase in the vehicle registration fee pursuant to Section 9250.3 of the Vehicle Code, as adjusted pursuant to subdivision (b) of that section.

(d) The revenues from the increase in the vehicle registration fee pursuant to Section 9250.6 of the Vehicle Code, as adjusted pursuant to subdivision (b) of that section.

(e) The revenues deposited in the account pursuant to Section 183.1 of the Streets and Highways Code.

(f) Any other revenues designated for the program.

2031.5. Each fiscal year the annual Budget Act shall contain an appropriation from the Road Maintenance and Rehabilitation Account to the Controller for the costs of carrying out his or her duties pursuant to this chapter and to the California Transportation Commission for the costs of carrying out its duties pursuant to this chapter and Section 14526.7 of the Government Code.

2032. (a) (1) After deducting the amounts appropriated in the annual Budget Act, as provided in Section 2031.5, two hundred million dollars ($200,000,000) of the remaining revenues deposited in the Road Maintenance and Rehabilitation Account shall be set aside annually for counties that have sought and received voter approval of taxes or that have imposed fees, including uniform developer fees as defined by subdivision (b) of Section 8879.67 of the Government Code, which taxes or fees are dedicated solely to transportation improvements. The Controller shall each month set aside one-twelfth of this amount, to accumulate a total of two hundred million dollars ($200,000,000) in each fiscal year.

(2) Notwithstanding Section 13340 of the Government Code, the funds available under this subdivision in each fiscal year are hereby continuously appropriated for allocation to each eligible county and each city in the county for road maintenance and rehabilitation purposes pursuant to Section 2033.

(b) (1) After deducting the amounts appropriated in the annual Budget Act pursuant to Section 2031.5 and the amount allocated in subdivision (a), beginning in the 2017–18 fiscal year, eighty million dollars ($80,000,000) of the remaining revenues shall be transferred annually to the State Highway Account for expenditure, upon appropriation by the Legislature, on the Active Transportation Program created pursuant to Chapter 8 (commencing with Section 2380) of Division 3 to be allocated by the California Transportation Commission pursuant to Section 2381.

(2) In addition to the funds transferred in paragraph (1), the department shall annually identify savings achieved through efficiencies implemented at the department. The department, through the annual budget process, shall propose, from the identified savings, an appropriation to be included in the annual Budget Act of up to seventy million dollars ($70,000,000), but not to exceed the total annual identified savings, from the State Highway Account for expenditure on the Active Transportation Program.

(c) After deducting the amounts appropriated in the annual Budget Act pursuant to Section 2031.5, the amount allocated in subdivision (a) and the amount transferred in paragraph (1) of subdivision (b), in the 2017–18, 2018–19, 2019–20, and 2020–21 fiscal years, the sum of thirty million dollars ($30,000,000) in each fiscal year from the remaining revenues shall be transferred to the Advance Mitigation Fund in the State Transportation Fund created pursuant to Section 21207 of the Public Resources Code.

(d) After deducting the amounts appropriated in the annual Budget Act pursuant to Section 2031.5, the amount allocated in subdivision (a), and the amounts transferred in paragraph (1) of subdivision (b) and in subdivision (c), beginning in the 2017–18 fiscal year and each fiscal year thereafter, and notwithstanding Section 13340 of the Government Code, there is hereby continuously appropriated to the California State University the sum of two million dollars ($2,000,000) from the remaining revenues for the purpose of conducting transportation research and

transportation-related workforce education, training, and development. Prior to the start of each fiscal year, the chairs of the Assembly Committee on Transportation and the Senate Committee on Transportation and Housing shall confer and set out a recommended priority list of research components to be addressed in the upcoming fiscal year.

(e) Notwithstanding Section 13340 of the Government Code, the balance of the revenues deposited in the Road Maintenance and Rehabilitation Account are hereby continuously appropriated as follows:

(1) Fifty percent for allocation to the department for maintenance of the state highway system or for purposes of the state highway operation and protection program.

(2) Fifty percent for apportionment to cities and counties by the Controller pursuant to the formula in clauses (i) and (ii) of subparagraph (C) of paragraph (3) of subdivision (a) of Section 2103 for the purposes authorized by this chapter.

2033. (a) On or before January 1, 2018, the commission, in cooperation with the department, transportation planning agencies, county transportation commissions, and other local agencies, shall develop guidelines for the allocation of funds pursuant to subdivision (a) of Section 2032.

(b) The guidelines shall be the complete and full statement of the policy, standards, and criteria that the commission intends to use to determine how these funds will be allocated.

(c) The commission may amend the adopted guidelines after conducting at least one public hearing.

2034. (a) (1) Prior to receiving an apportionment of funds under the program pursuant to paragraph (2) of subdivision (e) of Section 2032 from the Controller in a fiscal year, an eligible city or county shall submit to the commission a list of projects proposed to be funded with these funds pursuant to an adopted city or county budget. All projects proposed to receive funding shall be included in a city or county budget that is adopted by the applicable city council or county board of supervisors at a regular public meeting. The list of projects proposed to be funded with these funds shall include a description and the location of each proposed project, a proposed schedule for the project's completion, and the estimated useful life of the improvement. The project list shall not limit the flexibility of an eligible city or county to fund projects in

accordance with local needs and priorities so long as the projects are consistent with subdivision (b) of Section 2030.

(2) The commission shall report to the Controller the cities and counties that have submitted a list of projects as described in this subdivision and that are therefore eligible to receive an apportionment of funds under the program for the applicable fiscal year. The Controller, upon receipt of the report, shall apportion funds to eligible cities and counties.

(b) For each fiscal year, each city or county receiving an apportionment of funds shall, upon expending program funds, submit documentation to the commission that includes a description and location of each completed project, the amount of funds expended on the project, the completion date, and the estimated useful life of the improvement.

2036. (a) Cities and counties shall maintain their existing commitment of local funds for street, road, and highway purposes in order to remain eligible for an allocation or apportionment of funds pursuant to Section 2032.

(b) In order to receive an allocation or apportionment pursuant to Section 2032, the city or county shall annually expend from its general fund for street, road, and highway purposes an amount not less than the annual average of its expenditures from its general fund during the 2009–10, 2010–11, and 2011–12 fiscal years, as reported to the Controller pursuant to Section 2151. For purposes of this subdivision, in calculating a city's or county's annual general fund expenditures and its average general fund expenditures for the 2009–10, 2010–11, and 2011–12 fiscal years, any unrestricted funds that the city or county may expend at its discretion, including vehicle in-lieu tax revenues and revenues from fines and forfeitures, expended for street, road, and highway purposes shall be considered expenditures from the general fund. One-time allocations that have been expended for street and highway purposes, but which may not be available on an ongoing basis, including revenue provided under the Teeter Plan Bond Law of 1994 (Chapter 6.6 (commencing with Section 54773) of Part 1 of Division 2 of Title 5 of the Government Code), may not be considered when calculating a city's or county's annual general fund expenditures.

(c) For any city incorporated after July 1, 2009, the Controller shall calculate an annual average expenditure for the period

between July 1, 2009, and December 31, 2015, inclusive, that the city was incorporated.

(d) For purposes of subdivision (b), the Controller may request fiscal data from cities and counties in addition to data provided pursuant to Section 2151, for the 2009–10, 2010–11, and 2011–12 fiscal years. Each city and county shall furnish the data to the Controller not later than 120 days after receiving the request. The Controller may withhold payment to cities and counties that do not comply with the request for information or that provide incomplete data.

(e) The Controller may perform audits to ensure compliance with subdivision (b) when deemed necessary. Any city or county that has not complied with subdivision (b) shall reimburse the state for the funds it received during that fiscal year. Any funds withheld or returned as a result of a failure to comply with subdivision (b) shall be reapportioned to the other counties and cities whose expenditures are in compliance.

(f) If a city or county fails to comply with the requirements of subdivision (b) in a particular fiscal year, the city or county may expend during that fiscal year and the following fiscal year a total amount that is not less than the total amount required to be expended for those fiscal years for purposes of complying with subdivision (b).

2037. A city or county may spend its apportionment of funds under the program on transportation priorities other than those allowable pursuant to this chapter if the city's or county's average Pavement Condition Index meets or exceeds 80.

2038. (a) The department and local agencies, as a condition of receiving funds from the program, shall adopt and implement a program designed to promote and advance construction employment and training opportunities through preapprenticeship opportunities, either by the public agency itself or through contractors engaged by the public agencies to do work funded in whole or in part by funds made available by the program.

(b) The department and local agencies, as a condition of receiving funds from the program, shall ensure the involvement of the California Conservation Corps and certified community conservation corps in the delivery of projects and services funded in whole or in part by funds made available by the program.

SEC. 26. Section 2103.1 is added to the Streets and Highways Code, to read:

2103.1. (a) Notwithstanding Section 2103, the revenues transferred to the Highway Users Tax Account pursuant to Sections 8352.4, 8352.5, and 8352.6 of the Revenue and Taxation Code shall be distributed pursuant to the formula in paragraph (3) of subdivision (a) of Section 2103.

(b) Notwithstanding subdivision (b) of Section 2103, the portion of revenues in the Highway Users Tax Account attributable to the increases in the motor vehicle fuel excise tax pursuant to subparagraph (B) of paragraph (1) of subdivision (a) of Section 7360 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, shall be transferred to the Road Maintenance and Rehabilitation Account pursuant to Section 2031.

(c) Notwithstanding subdivision (b) of Section 2103, the portion of revenues in the Highway Users Tax Account attributable to the increase in the diesel fuel excise tax pursuant to subdivision (b) of Section 60050 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, shall be transferred to the Trade Corridors Improvement Fund pursuant to Section 2192.4.

SEC. 27. Section 2192 of the Streets and Highways Code is amended to read:

2192. (a) (1) The Trade Corridors Improvement Fund, created pursuant to subdivision (c) of Section 8879.23 of the Government Code, is hereby continued in existence to receive revenues from state sources other than the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006.

(2) Revenues apportioned to the state under Section 167 of Title 23 of the United States Code from the national highway freight program, pursuant to the federal Fixing America's Surface Transportation Act ("FAST Act," Public Law 114-94) shall be allocated for projects approved pursuant to this chapter.

(b) This chapter shall govern the expenditure of those state and federal revenues described in subdivision (a).

(c) The funding described in subdivision (a) shall be available upon appropriation for allocation by the California Transportation Commission for infrastructure improvements in this state on federally designated Trade Corridors of National and Regional Significance, on the Primary Freight Network, and along other corridors that have a high volume of freight movement, as

determined by the commission and as identified in the state freight plan developed and adopted pursuant to Section 13978.8 of the Government Code. In prioritizing the projects for funding, the commission shall consult the California Sustainable Freight Action Plan released in July 2016 pursuant to Executive Order B-32-15, trade infrastructure and goods movement plans adopted by regional transportation planning agencies, adopted regional transportation plans required by state and federal law, and the applicable port master plan. Eligible projects for the funding described in subdivision (a) shall further the state's economic, environmental, and public health objectives and goals for freight policy, as articulated in the plans to be consulted pursuant to this subdivision. Eligible projects are as follows:

(1) Highway, local road, and rail capital and capacity improvements, rail landside access improvements, landside freight access improvements to airports, seaports, and land ports, and operational improvements to more efficiently accommodate the movement of freight, particularly for ingress and egress to and from the state's land ports of entry, rail terminals, and seaports, including navigable inland waterways used to transport freight between seaports, land ports of entry, and airports, and to relieve traffic congestion along major trade or goods movement corridors.

(2) Freight rail system improvements to enhance the ability to move goods from seaports, land ports of entry, and airports to warehousing and distribution centers throughout California, including projects that separate rail lines from highway or local road traffic, improve freight rail mobility through mountainous regions, relocate rail switching yards, and other projects that improve the efficiency and capacity of the rail freight system.

(3) Infrastructure improvement projects to enhance the capacity and efficiency of ports without having the effect of displacing workers in port operations.

(4) Truck corridor and capital and operational improvements, including, but not limited to, dedicated truck facilities or truck toll facilities.

(5) Border capital and operational improvements that enhance goods movement between California and Mexico and that maximize the state's ability to access funds made available to the state by federal law.

(6) Surface transportation and connector road capital and operational improvements to effectively facilitate the movement of goods, particularly for ingress and egress to and from the state's land ports of entry, airports, and seaports, to relieve traffic congestion along major trade or goods movement corridors.

(d) (1) In evaluating the program of projects to be funded with funds described in paragraph (2) of subdivision (a), the commission shall evaluate the total potential economic and noneconomic benefits of the program of projects to California's economy, environment, and public health. The commission shall consult with the agencies identified in Executive Order B-32-15 and metropolitan planning organizations in order to utilize the appropriate models, techniques, and methods to develop the parameters for evaluating the program of projects. The commission shall allocate the funding described in paragraph (2) of subdivision (a) for trade infrastructure improvements consistent with Section 8879.52 of the Government Code and the Trade Corridors Improvement Fund (TCIF) Guidelines adopted by the commission on November 27, 2007, or as amended by the commission, and in a manner that (A) addresses the state's most urgent needs, (B) balances the demands of various land ports of entry, seaports, and airports, (C) provides reasonable geographic balance between the state's regions, (D) places emphasis on projects that improve trade corridor mobility and safety while reducing emissions of diesel particulate and other pollutant emissions and reducing other negative community impacts, and (E) makes a significant contribution to the state's economy.

(2) The commission shall allocate the federal freight funding, specifically, pursuant to the original TCIF Guidelines, as adopted by the commission on November 27, 2007, and in the manner described in (A) to (E), inclusive, of paragraph (1).

(A) One hundred fifty million dollars ($150,000,000) shall be dedicated exclusively to fund improvements to California's existing or planned land ports of entry on the border with Mexico. The department, in consultation with the San Diego Association of Governments and the Imperial County Transportation Commission, shall nominate a program of projects for funding allocations that make border capital and operational improvements to enhance goods movement between California and Mexico and contribute to the reduction of emissions.

(B) Seventy million dollars ($70,000,000) shall be dedicated exclusively to fund projects for the elimination, alteration, or improvement of hazardous railroad-highway grade crossings. Projects shall be jointly nominated by the department and a regional transportation agency.

(C) Three hundred sixty million dollars ($360,000,000) shall be available for projects nominated by regional transportation agencies and other public agencies, including counties, cities, and port authorities, in consultation with the department, and consistent with corridor-based programming targets contained in the Trade Corridors Investment Fund (TCIF) Guidelines adopted by the commission on November 27, 2007, or as amended by the commission, to provide reasonable geographic targets for funding allocations without constraining what an agency may propose or what the commission may approve. However, the San Diego Association of Governments, the Imperial County Transportation Commission, and other public agencies in San Diego and Imperial Counties shall be excluded from nominating projects under this subparagraph.

~~(2)~~

(3) The commission shall proportionately adjust the amounts in subparagraphs (A), (B), and (C) of paragraph (1) if the amount of funds described in paragraph (2) of subdivision (a) is less than or greater than five hundred eighty million dollars ($580,000,000).

~~(3)~~

(4) The commission shall adopt guidelines to allocate the funding described in subdivision (a) for trade infrastructure improvements in a manner that (A) addresses the state's most urgent needs, (B) balances the demands of various land ports of entry, seaports, and airports, (C) provides reasonable geographic balance between the state's regions, (D) places emphasis on projects that improve trade corridor mobility and safety while reducing emissions of diesel particulates, greenhouse gases, and other pollutants and reducing other negative community impacts, and (E) makes a significant contribution to the state's economy. The commission shall adopt any amendments to the 2007 guidelines on or before April 1, 2017.

~~(4)~~

(5) In adopting amended guidelines, and developing and adopting the program of projects, the commission shall do all of the following:

(A) Accept nominations for projects to be included in the program of projects from regional and local transportation agencies and the department.

(B) Recognize the key role of the state in project identification and support integrating statewide goods movement priorities into the corridor approach.

(C) Give the highest priority for funding allocations to projects jointly nominated by the department and a regional or other public agency.

~~(5)~~

(6) In addition, the commission shall also consider the following factors when allocating funds under this section:

(A) "Velocity," which means the speed by which large cargo would travel from the land port of entry or seaport through the distribution system.

(B) "Throughput," which means the volume of cargo that would move from the land port of entry or seaport through the distribution system.

(C) "Reliability," which means a reasonably consistent and predictable amount of time for cargo to travel from one point to another on any given day or at any given time in California.

(D) "Congestion reduction," which means the reduction in recurrent daily hours of delay to be achieved.

SEC. 28. Section 2192.2 of the Streets and Highways Code is amended to read:

2192.2. The commission shall allocate funds made available by this chapter to projects that have identified and committed supplemental funding from appropriate local, federal, or private sources. The commission shall determine the appropriate amount of supplemental funding each project should have to be eligible for moneys based on a project-by-project review and an assessment of the project's benefit to the state and the program. Funded improvements shall have supplemental funding that is at least equal to the amount of the contribution under this chapter. The commission may give priority for funding to projects with higher levels of committed supplemental funding.

SEC. 29. Section 2192.4 is added to the Streets and Highways Code, to read:

2192.4. The portion of the revenues in the Highway Users Tax Account attributable to the increase in the diesel fuel excise tax pursuant to subdivision (b) of Section 60050 of the Revenue and Taxation Code, as adjusted pursuant to subdivision (c) of that section, shall be transferred to the Trade Corridors Improvement Fund.

SEC. 30. Section 9250.3 is added to the Vehicle Code, to read:

9250.3. (a) In addition to any other fees specified in this code or the Revenue and Taxation Code, commencing October 1, 2017, a registration fee of thirty-eight dollars ($38) shall be paid to the department for registration or renewal of registration of every vehicle subject to registration under this code, except those vehicles that are expressly exempted under this code from payment of registration fees.

(b) Beginning October 1, 2020, and every third year thereafter, the Department of Motor Vehicles shall adjust the fee imposed under this section for inflation in an amount equal to the change in the California Consumer Price Index for the prior three-year period, as calculated by the Department of Finance, with amounts equal to or greater than fifty cents ($0.50) rounded to the next highest whole dollar.

(c) Revenues from the fee, after the deduction of the department's administrative costs related to this section, shall be deposited in the Road Maintenance and Rehabilitation Account created pursuant to Section 2031 of the Streets and Highways Code.

SEC. 31. Section 9250.6 is added to the Vehicle Code, to read:

9250.6. (a) In addition to any other fees specified in this code, or the Revenue and Taxation Code, commencing October 1, 2017, a registration fee of one hundred dollars ($100) shall be paid to the department for registration or renewal of registration of every zero-emission motor vehicle subject to registration under this code, except those motor vehicles that are expressly exempted under this code from payment of registration fees.

(b) Beginning October 1, 2020, and every third year thereafter, the Department of Motor Vehicles shall adjust the fee imposed under this section for inflation in an amount equal to the change in the California Consumer Price Index for the prior three-year

period, as calculated by the Department of Finance, with amounts equal to or greater than fifty cents ($0.50) rounded to the next highest whole dollar.

(c) Revenues from the fee, after deduction of the department's administrative costs related to this section, shall be deposited in the Road Maintenance and Rehabilitation Account created pursuant to Section 2031 of the Streets and Highways Code.

(d) This section does not apply to a commercial motor vehicle subject to Section 9400.1.

(e) The registration fee required pursuant to this section does not apply to the initial registration after the purchase of a new zero-emission motor vehicle.

(f) For purposes of this section, "zero-emission motor vehicle" means a motor vehicle as described in subdivisions (c) and (d) of Section 44258 of the Health and Safety Code, or any other motor vehicle that is able to operate on any fuel other than gasoline or diesel fuel.

SEC. 32. Section 9400.5 is added to the Vehicle Code, to read:

9400.5. (a) Notwithstanding Sections 9400.1, 9400.4, and 42205 of this code, Sections 16773 and 16965 of the Government Code, Section 2103 of the Streets and Highways Code, or any other law, weight fee revenues shall only be transferred consistent with the schedule provided in subdivision (b) from the State Highway Account to the Transportation Debt Service Fund, the Transportation Bond Direct Payment Account, or any other fund or account for the purpose of payment of the debt service on transportation general obligation bonds and shall not be loaned to the General Fund.

(b) (1) The transfer of weight fee revenues, after deduction of collection costs, from the State Highway Account pursuant to subdivision (a) shall not exceed:

(A) Ninety percent of the total weight fees in the 2017–18 fiscal year.

(B) Eighty percent of the total weight fees in the 2018–19 fiscal year.

(C) Seventy percent of the total weight fees in the 2019–20 fiscal year.

(D) Sixty percent of the total weight fees in the 2020–21 fiscal year.

(E) Fifty percent of the total weight fees in 2021–22 and subsequent fiscal years.

(2) The California Transportation Commission, on or before January 1, 2018, shall recommend a course of action to the Legislature and the Governor that would provide for the portion of weight fees described in subparagraph (E) of paragraph (1) to be retained in the State Highway Account or transferred to the Road Maintenance and Rehabilitation Account created pursuant to Section 2031.

SEC. 33. The increases in tax rates in Sections 6051.8, 6201.8, 7360, and 60050 of the Revenue and Taxation Code, as amended by this act, shall become effective on July 1, 2017.

SEC. 34. This act is an urgency statute necessary for the immediate preservation of the public peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are:

In order to provide additional funding for road maintenance and rehabilitation purposes as quickly as possible, it is necessary for this act to take effect immediately.

O

AB 193 (Cervantes)
Air Quality Improvement Program: Clean Reused Vehicle Rebate Project.

Summary: This bill would require the State Air Resources Board (CARB) to establish the Clean Reused Vehicle Rebate Project (CRVRP), as a part of the Air Quality Improvement Program (AQIP), to provide rebates or other incentives for the acquisition of an eligible used vehicle; the replacement or refurbishment of a battery and related components for an eligible used vehicle or an extended warranty for the battery or related components; or an extended service warranty to cover unexpected vehicle repairs not covered by the manufacturer's warranty related to unique problems in eligible used vehicles.

Background: Existing law establishes the Air Quality Improvement Program (AQIP) that is administered by CARB for the purposes of funding projects related to, among other things, the reduction of criteria air pollutants and improvement of air quality. Pursuant to its existing statutory authority, CARB has established the Clean Vehicle Rebate Project (CVRP), as a part of AQIP, to promote the production and use of zero-emission vehicles by providing rebates for the purchase of new zero-emission vehicles.

Status: 1/30/2017 -- Referred to Assembly Comm. on TRANS.

Specific Provisions: Specifically, this bill would:

1) No later than July 1, 2019, require CARB to establish, as a part of AQIP, the CRVRP to provide an applicant with any of the following:
    a. A rebate or other incentive with a value of up to one thousand eight hundred dollars ($1,800) for the acquisition of an eligible used vehicle from a licensed dealer.
    b. A rebate or other incentive for the replacement or refurbishment of a battery and related components for an eligible used vehicle, for an extended warranty for the battery and related components, or for both.
    c. A rebate or other incentive for an extended service warranty to cover unexpected vehicle repairs not covered by the manufacturer's warranty related to unique problems in eligible used vehicles.
2) Limit any rebate or other incentive issued pursuant to this section to one per vehicle.
3) "Eligible used vehicle" only includes the same categories of vehicles that are eligible for a rebate under CVRP.
4) Rebates or other incentives issued pursuant to this section shall be limited to low- and moderate-income consumers residing in disadvantaged communities, as identified pursuant to Health & Safety Code Section 39711.
5) A rebate or other incentive available (with a value of up to $1,800 for the acquisition of an eligible used vehicle) shall only be issued to an applicant who resides in one of the following:

   a. A county where less than 2 percent of the total rebates of CVRP have been issued.
   b. A district that has been designated by CARB as being in nonattainment and as not meeting the federal ambient air quality standards.
6) CARB shall coordinate the CRVRP with the CVRP, the enhanced fleet modernization program (EFMP), and the Charge Ahead California Initiative, including, but not limited to, all of the following:
   a. Coordinating eligibility pursuant to this section with eligibility for EFMP.
   b. Ensuring appropriate outreach and targeting to low- and moderate-income households in an effort to encourage participation.
   c. Expanding financing mechanisms, including, but not limited to, a loan or loan-loss reserve credit enhancement program to increase consumer access to zero-emission and near-zero-emission vehicle financing and leasing options that can help lower expenditures on transportation and prequalification or point-of-sale rebates or other methods to increase participation rates among low- and moderate-income consumers.

Impacts on AQMD's Mission, Operations or Initiatives: This bill is aligned with SCAQMD's priorities regarding reducing criteria pollutant and toxic emissions within the South Coast region, especially those related to mobile sources.

Light duty vehicles are a significant source of criteria pollutant emissions in the South Coast Basin, including nitrogen oxide (NOx) emissions, which greatly impact the public health within the South Coast region.

This bill would also be consistent with SCAQMD's policy priorities regarding environmental justice. Specifically, the bill would directly help disadvantaged communities by reducing pollution sources within those areas and by providing lower income individuals within disproportionately impacted communities with better access to used clean vehicles at a reduced cost.

Recommended Position: Support

ASSEMBLY BILL No. 193

Introduced by Assembly Member Cervantes

January 19, 2017

An act to add Section 44274.9 to the Health and Safety Code, relating to vehicular air pollution.

LEGISLATIVE COUNSEL'S DIGEST

AB 193, as introduced, Cervantes. Air Quality Improvement Program: Clean Reused Vehicle Rebate Project.

Existing law establishes the Air Quality Improvement Program that is administered by the State Air Resources Board for the purposes of funding projects related to, among other things, the reduction of criteria air pollutants and improvement of air quality. Pursuant to its existing statutory authority, the state board has established the Clean Vehicle Rebate Project, as a part of the Air Quality Improvement Program, to promote the production and use of zero-emission vehicles by providing rebates for the purchase of new zero-emission vehicles.

This bill would require the state board to establish the Clean Reused Vehicle Rebate Project, as a part of the Air Quality Improvement Program, to provide rebates or other incentives for the acquisition of an eligible used vehicle, as defined; the replacement or refurbishment of a battery and related components for an eligible used vehicle or an extended warranty for the battery or related components; or an extended service warranty to cover unexpected vehicle repairs not covered by the manufacturer's warranty related to unique problems in eligible used vehicles, as specified.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. Section 44274.9 is added to the Health and Safety Code, to read:

44274.9. (a) For purposes of this section, the following terms mean the following:

(1) "Eligible used vehicle" only includes the same categories of vehicles that are eligible for a rebate under the Clean Vehicle Rebate Project.

(2) "Used vehicle" has the same meaning as set forth in Section 665 of the Vehicle Code.

(b) No later than July 1, 2019, the state board shall establish, as a part of the Air Quality Improvement Program, the Clean Reused Vehicle Rebate Project to provide an applicant with any of the following:

(1) A rebate or other incentive with a value of up to one thousand eight hundred dollars ($1,800) for the acquisition of an eligible used vehicle from a licensed dealer.

(2) A rebate or other incentive for the replacement or refurbishment of a battery and related components for an eligible used vehicle, for an extended warranty for the battery and related components, or for both.

(3) A rebate or other incentive for an extended service warranty to cover unexpected vehicle repairs not covered by the manufacturer's warranty related to unique problems in eligible used vehicles.

(c) A rebate or other incentive issued pursuant to this section shall be limited to one per vehicle.

(d) Rebates or other incentives issued pursuant to this section shall be limited to low- and moderate-income consumers residing in disadvantaged communities, as identified pursuant to Section 39711.

(e) Notwithstanding subdivision (d), a rebate or other incentive available pursuant to paragraph (1) of subdivision (b) shall only be issued to an applicant who resides in one of the following:

(1) A county where less than 2 percent of the total rebates of the Clean Vehicle Rebate Project, established as part of the Air Quality Improvement Program established pursuant to this article, have been issued.

(2) A district that has been designated by the state board as being in nonattainment and as not meeting the federal ambient air quality standards.

(f) The state board shall coordinate the Clean Reused Vehicle Rebate Project with the Clean Vehicle Rebate Project, established as part of the Air Quality Improvement Program established pursuant to this article, the enhanced fleet modernization program, established pursuant to Article 11 (commencing with Section 44125) of Chapter 5, and the Charge Ahead California Initiative, established pursuant to Chapter 8.5 (commencing with Section 44285), including, but not limited to, all of the following:

(1) Coordinating eligibility pursuant to this section with eligibility for the enhanced fleet modernization program.

(2) Ensuring appropriate outreach and targeting to low- and moderate-income households in an effort to encourage participation.

(3) Expanding financing mechanisms, including, but not limited to, a loan or loan-loss reserve credit enhancement program to increase consumer access to zero-emission and near-zero-emission vehicle financing and leasing options that can help lower expenditures on transportation and prequalification or point-of-sale rebates or other methods to increase participation rates among low- and moderate-income consumers.

(g) (1) The state board shall establish safeguards for the project established pursuant to this section to prevent both of the following:

(A) Fraudulent activity by the sellers and acquirers of eligible used vehicles.

(B) Practices that could prevent the intended recipients of rebates or other incentives from benefiting from this section.

(2) For purposes of this subdivision, “fraudulent activity” may include raising the price of eligible used vehicles in a manner that partially or completely captures a rebate or other incentive issued pursuant to this section.

O

SB 53 (Hueso)
Natural Gas Vehicles

Summary: This bill would amend Section 35551 of the Vehicle Code, relating to vehicles. This bill adopts a vehicle weight exemption for natural gas vehicles as specified in the Fixing America's Surface Transportation (FAST) Act of 2015. The act would allow natural gas vehicles to exceed federal weight limits by up to 2,000 pounds.

Background:

- Natural gas vehicles generate significantly less greenhouse gas emissions than traditional gasoline or diesel-powered vehicles. This makes them an ideal resource to help California achieve its ambitious climate policy goals.
- Natural gas fuel systems can add up to 2,000 pounds to a vehicle's weight compared to diesel or gasoline fuel systems. Because natural gas is less dense than gasoline or diesel, the vehicle must carry larger tanks or additional tanks, which add weight.
- For businesses that operate vehicles at or near the weight limits, additional weight for natural gas equipment reduces the vehicle's payload capacity, creating a strong disincentive to switch to a natural gas. For businesses that have chosen to switch to natural gas vehicles anyway, the lower payload per trip requires an increase in vehicle miles traveled to carry the same payload, thus counteracting the potential emissions reductions.
- The federal government addressed these problems by adopting a vehicle weight exemption for natural gas vehicles in the Fixing America's Surface Transportation (FAST) Act of 2015. The act allows natural gas vehicles to exceed federal weight limits by up to 2,000 pounds vis (23 U.S.C. § 127)
- The FAST Act only applies to federal interstate highways, so the exemption only becomes truly effective when states adopt the same exemption for state highways and local roads.
- Approximately 13 states have already raised their weight limit for natural gas vehicles including Arizona, Colorado, Illinois, Indiana, Kansas, Louisiana, Minnesota, New Mexico, North Carolina, Ohio, Oklahoma, South Carolina and Virginia. All but three of these were enacted in 2016.

Status: 1/12/2017 -- Referred to Sen. Comm. on T. & H.

Specific Provisions: This bill would adopt a vehicle weight exemption for natural gas vehicles up to 2000 lbs.

Impacts on AQMD's Mission, Operations or Initiatives: This bill is aligned with SCAQMD's priorities regarding reducing criteria pollutant and toxic emissions within the South Coast region, especially those related to goods movement. Heavy duty trucks are one of the largest sources of NOx emissions in the South Coast Basin, which greatly impact the health of communities located near ports, railyards, distribution centers, and roads with high truck activity. This bill would result in cleaner air by incentivizing transition from diesel to natural gas.

Recommended Position: Support.

SENATE BILL No. 53

Introduced by Senator Hueso

December 5, 2016

An act to amend Section 35551 of the Vehicle Code, relating to vehicles.

LEGISLATIVE COUNSEL'S DIGEST

SB 53, as introduced, Hueso. Natural gas vehicles.

Existing state and federal law sets specified limits on the total gross weight imposed on the highway by any group of 2 or more consecutive axles. Existing federal law authorizes a vehicle operated by an engine fueled primarily by natural gas to exceed these weight limits, up to a specified maximum, by an amount equal to the difference between the weight of the vehicle attributable to the natural gas tank and fueling system carried by that vehicle and the weight of a comparable diesel tank and fueling system.

This bill would authorize a vehicle operated by an engine fueled primarily by natural gas to exceed these weight limits, up to a specified maximum, by an amount equal to the difference between the weight of the vehicle attributable to the natural gas tank and fueling system carried by that vehicle and the weight of a comparable diesel tank and fueling system.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. Section 35551 of the Vehicle Code is amended to read:

35551. (a) Except as otherwise provided in this section or Section 35551.5, the total gross weight in pounds imposed on the highway by any group of two or more consecutive axles shall not exceed that given for the respective distance in the following table:

Distance in feet between the extremes of any group of 2 or more consecutive axles	2 axles	3 axles	4 axles	5 axles	6 axles
4	34,000	34,000	34,000	34,000	34,000
5	34,000	34,000	34,000	34,000	34,000
6	34,000	34,000	34,000	34,000	34,000
7	34,000	34,000	34,000	34,000	34,000
8	34,000	34,000	34,000	34,000	34,000
9	39,000	42,500	42,500	42,500	42,500
10	40,000	43,500	43,500	43,500	43,500
11	40,000	44,000	44,000	44,000	44,000
12	40,000	45,000	50,000	50,000	50,000
13	40,000	45,500	50,500	50,500	50,500
14	40,000	46,500	51,500	51,500	51,500
15	40,000	47,000	52,000	52,000	52,000
16	40,000	48,000	52,500	52,500	52,500
17	40,000	48,500	53,500	53,500	53,500
18	40,000	49,500	54,000	54,000	54,000
19	40,000	50,000	54,500	54,500	54,500
20	40,000	51,000	55,500	55,500	55,500
21	40,000	51,500	56,000	56,000	56,000
22	40,000	52,500	56,500	56,500	56,500
23	40,000	53,000	57,500	57,500	57,500
24	40,000	54,000	58,000	58,000	58,000
25	40,000	54,500	58,500	58,500	58,500
26	40,000	55,500	59,500	59,500	59,500
27	40,000	56,000	60,000	60,000	60,000
28	40,000	57,000	60,500	60,500	60,500
29	40,000	57,500	61,500	61,500	61,500
30	40,000	58,500	62,000	62,000	62,000
31	40,000	59,000	62,500	62,500	62,500

32	40,000	60,000	63,500	63,500	63,500
33	40,000	60,000	64,000	64,000	64,000
34	40,000	60,000	64,500	64,500	64,500
35	40,000	60,000	65,500	65,500	65,500
36	40,000	60,000	66,000	66,000	66,000
37	40,000	60,000	66,500	66,500	66,500
38	40,000	60,000	67,500	67,500	67,500
39	40,000	60,000	68,000	68,000	68,000
40	40,000	60,000	68,500	70,000	70,000
41	40,000	60,000	69,500	72,000	72,000
42	40,000	60,000	70,000	73,280	73,280
43	40,000	60,000	70,500	73,280	73,280
44	40,000	60,000	71,500	73,280	73,280
45	40,000	60,000	72,000	76,000	80,000
46	40,000	60,000	72,500	76,500	80,000
47	40,000	60,000	73,500	77,500	80,000
48	40,000	60,000	74,000	78,000	80,000
49	40,000	60,000	74,500	78,500	80,000
50	40,000	60,000	75,500	79,000	80,000
51	40,000	60,000	76,000	80,000	80,000
52	40,000	60,000	76,500	80,000	80,000
53	40,000	60,000	77,500	80,000	80,000
54	40,000	60,000	78,000	80,000	80,000
55	40,000	60,000	78,500	80,000	80,000
56	40,000	60,000	79,500	80,000	80,000
57	40,000	60,000	80,000	80,000	80,000
58	40,000	60,000	80,000	80,000	80,000
59	40,000	60,000	80,000	80,000	80,000
60	40,000	60,000	80,000	80,000	80,000

(b) In addition to the weights specified in subdivision (a), two consecutive sets of tandem axles may carry a gross weight of 34,000 pounds each if the overall distance between the first and last axles of the consecutive sets of tandem axles is 36 feet or more. The gross weight of each set of tandem axles shall not exceed 34,000 pounds and the gross weight of the two consecutive sets of tandem axles shall not exceed 68,000 pounds.

(c) The distance between axles shall be measured to the nearest whole foot. When a fraction is exactly six inches, the next larger whole foot shall be used.

(d) Nothing contained in this section shall affect the right to prohibit the use of any highway or any bridge or other structure thereon in the manner and to the extent specified in Article 4 (commencing with Section 35700) and Article 5 (commencing with Section 35750) of this chapter.

(e) The gross weight limits expressed by this section and Section 35550 shall include all enforcement tolerances.

(f) A vehicle, if operated by an engine fueled primarily by natural gas, may exceed any vehicle weight limit under this section by an amount that is equal to the difference between the weight of the vehicle attributable to the natural gas tank and fueling system carried by that vehicle and the weight of a comparable diesel tank and fueling system. The maximum gross vehicle weight of a vehicle subject to this subdivision is 82,000 pounds.

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ATTACHMENT 5



LEGISLATIVE COUNSEL'S DIGEST

Bill No.

as introduced, _____.

General Subject: Nonvehicular air pollution: order of abatement.

Existing law regulates the emission of air pollutants by stationary sources and authorizes the regional air quality management districts and air pollution control districts (air districts) to enforce those requirements. Existing law authorizes the governing boards and the hearing boards of air districts to issue an order for abatement, after notice and a hearing, whenever they find a violation of those requirements.

This bill would authorize the air pollution control officer, if he or she determines that a person has violated those requirements and the violation presents an imminent and substantial endangerment to the public health or welfare, or the environment, to issue an order for abatement pending a hearing before the hearing board of the air district. The bill would require the air pollution control officer to notify the alleged violator of the order and would establish a procedure for a postorder hearing.

Vote: majority. Appropriation: no. Fiscal committee: no. State-mandated local program: no.





An act to add Section 42451.5 to the Health and Safety Code, relating to nonvehicular air pollution.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 42451.5 is added to the Health and Safety Code, to read:

42451.5. (a) If the air pollution control officer determines that a person is constructing or operating any article, machine, equipment, or other contrivance without a permit required by this part, or is in violation of Section 41700 or 41701 or of any order, rule, or regulation prohibiting or limiting the discharge of air contaminants into the air and that the violation presents an imminent and substantial endangerment to the public health or welfare, or the environment, the air pollution control officer may issue an order for abatement to the person pending a hearing pursuant to Section 42450. The order shall be effective upon the notification of the person of the order. In notifying the person, the air pollution control officer shall also provide that person with an accusation specifying the grounds on which the order is issued and procedures by which the person may challenge the order.

(b) Upon receipt by the air district of a notice of defense to the accusation from the person, the air district shall, within 15 days, set the matter for a hearing pursuant to this article, which shall be held as soon as possible, but not later than 30 days after the receipt of the notice.

(c) The order shall remain in effect until the hearing is completed and the hearing board has made a final determination on the merits, which shall be made within 60 days after the completion of the hearing. If the determination is not transmitted within this period, the order shall be of no further effect.

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Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 28

REPORT: Special Legislative Committee

SYNOPSIS: The Legislative Committee held a Special Meeting on Thursday, February 16, 2017. The next regularly scheduled Legislative Committee meeting is Friday, March 10, 2017 at 9 a.m.

Agenda Item	Recommendation
Proposed Legislation to Enhance an Existing Smog Abatement Fee	Support in Concept
Proposed Legislation to Create a Port Container Cargo Fee	Support in Concept

RECOMMENDED ACTION:
Receive and file this report, and approve agenda items as specified in this letter.

Judith Mitchell
Chair
Legislative Committee

DJA:PFC:mjk

Attendance *[Attachment 1]*
A special meeting of the Legislative Committee was held on February 16, 2017. Committee Chair Judith Mitchell and Committee Members Dr. Clark E. Parker, Sr. and Janice Rutherford all attended via teleconference. In addition, Board Member Michael Cacciotti attended via teleconference and was appointed to the committee for this meeting. Committee Members Joe Buscaino and Shawn Nelson were absent.

Proposed Legislation for Approval *[Attachment 2]*
Mr. Philip Crabbe, Community Relations Manager in SCAQMD's Legislative, Public Affairs and Media (LPAM) Office, described a potential legislative proposal which staff seeks approval to pursue in the state Legislature as an SCAQMD-sponsored item. This legislative proposal would delay vehicle inspection and maintenance for new vehicles from the previously required six years to eight years. The Smog Check fee of $48, which consumers currently pay for a Smog Check of their vehicle after six years, would instead be collected as a smog abatement fee, which would help provide additional

funding for the Carl Moyer Program, with no increased fiscal impact to consumers. Mr. Crabbe explained that in previous years, CARB received about $65 million per year, through the current smog abatement fee, for the Carl Moyer Program, which is then distributed to air agencies statewide. SCAQMD receives about $28-$30 million of those funds per year. Under the proposed legislation, this funding would triple and be used for more targeted diesel PM and NOx emissions reductions from heavy-duty vehicles. Mr. Crabbe also explained that, unlike the Smog Check program, which applies throughout California, this increase in Carl Moyer funds could be better directed and more specifically utilized in areas, such as disadvantaged communities, to reduce direct exposure to heavy-duty diesel vehicle emissions.

In response to an inquiry from Mayor Cacciotti, Mr. Fred Minassian, Assistant Deputy Executive Officer/Science & Technology Advancement Office clarified that the Bureau of Automotive Repair's (BAR's) share of funds from the current smog abatement fee would remain unchanged with this proposal.

In response to an inquiry from Councilmember Mitchell, Mr. Minassian reported that the anticipated revenue with the adoption of this proposal would triple the current amount, bringing in approximately $180 million, of which SCAQMD would receive $80 to $90 million. Mr. Minassian also clarified that the Carl Moyer Program is statewide and that the funding amount each air district receives is determined by a formula based on population size of the respective air district jurisdictions.

Councilmember Mitchell inquired as to whether the 44 percent of the Carl Moyer Program funds that the SCAQMD receives remains at the same percentage every year. Executive Officer Wayne Nastri responded in the affirmative.

Dr. Parker inquired as to whether there was a big difference between the percentages of population between the air districts versus numbers of vehicles between the air districts. Mr. Nastri indicated that staff would gather this information and report back.

Councilmember Mitchell asked for confirmation that this proposal would not hurt disadvantaged communities. Mr. Nastri responded that it would not and said that state legislators and staff who had seen the proposal really liked the concept.

Dr. Parker asked how staff would respond to concerns from environmentalists who would say that the District is allowing more cars to pollute the area. Mr. Nastri responded that through the funds collected, the SCAQMD would have greater ability to reduce pollution from vehicles, specifically heavy-duty vehicles, which will have a greater impact on improving public health.

Staff recommended a position of *SUPPORT IN CONCEPT* for this potential SCAQMD- sponsored legislative proposal.
Moved by Parker; seconded by Cacciotti; unanimously approved.
Ayes: Cacciotti, Parker, Mitchell, Rutherford
Noes: None
Absent: Buscaino, Nelson

Create a Port Container Cargo Fee *[Attachment 3]*
Mr. Crabbe presented on a second potential legislative proposal, which staff seeks approval to pursue in the state Legislature as an SCAQMD-sponsored item. This proposed legislation would impose a fee on container cargo imported and exported through the ports of Long Beach, Los Angeles, and Oakland in an amount of $100 per twenty-foot equivalent unit (TEU). The bill would require the fee revenues to be used to mitigate adverse air quality impacts associated with goods movement in and out of the three ports. Mr. Crabbe stated that based on estimates in 2008-09, this fee could potentially generate revenue in the range of $1.1 billion annually, by the Ports of Los Angeles and Long Beach. Mr. Crabbe explained further that the Los Angeles/Long Beach port complex is the largest in the United States and is projected to see cargo approximately double by 2035. The ports are also the single largest source of air pollution in the South Coast Basin.

Mr. Nastri discussed details from Senator Lowenthal's 2008 bill on SB 974,a port container cargo fee which was vetoed by Governor Schwarzenegger. A discussion ensued on the detrimental environmental and public health impacts of goods movement on the South Coast region and the need for air quality mitigation. Supervisor Rutherford voiced concern that this proposed legislation may make ports in California less competitive than ports elsewhere, suggested that there should a nationwide fee to avoid this, and asked whether staff had done a study on how the local ports would be impacted financially. A further discussion followed regarding the low pass-through costs on shippers from the proposed fee, and the competitiveness of ports and their current fees.

Dr. Parker inquired whether there were any fees of this nature currently. Ms. Barbara Baird, Chief Deputy Counsel, responded that the ports had issued a fee of $30 themselves several years ago to change their fleet in response to environmental concerns. Ms. Baird reported that the ports are able to issue fees on their own without going through the Legislature.

In response to an inquiry from Dr. Parker, Mr. Nastri stated that the funds collected would go to the respective air districts containing the specified ports.

Mayor Cacciotti asked that staff put together a diagram which would compare fees between the local ports versus other ports around the nation. Mr. Nastri stated that staff would gather the information and report back.

Staff recommended a *SUPPORT IN CONCEPT* for this potential SCAQMD-sponsored legislative proposal.
Moved by Cacciotti; seconded by Parker.
Ayes: Cacciotti, Parker, Mitchell
Noes: Rutherford
Absent: Buscaino, Nelson

The committee adjourned until Friday, March 10, 2017.

Attachments
1. Attendance Record
2a. Legislative Proposal – Smog Abatement Fee
2b. Smog Abatement Fee Chart
2c. Smog Abatement Fee Language
3. Legislative Proposal – Port Container Cargo Fee

ATTACHMENT 1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SPECIAL LEGISLATIVE COMMITTEE MEETING
Attendance – February 16, 2017

Councilmember Judith Mitchell (Teleconference)	SCAQMD Board Member
Dr. Clark E. Parker, Sr. (Teleconference)	SCAQMD Board Member
Supervisor Janice Rutherford (Teleconference)	SCAQMD Board Member
Mayor Michael Cacciotti (Teleconference)	SCAQMD Board Member
Paul Gonsalves (Teleconference)	Joe A. Gonsalves & Son
Will Gonzalez (Teleconference)	Gonzalez, Quintana, Hunter & Cruz
Derrick Alatorre	SCAQMD Staff
Leeor Alpern	SCAQMD Staff
Barbara Baird	SCQAMD Staff
Marc Carrel	SCAQMD Staff
Tina Cox	SCAQMD Staff
Philip Crabbe	SCAQMD Staff
Julie Franco	SCAQMD Staff
Laura Garrett	SCAQMD Staff
Monika Kim	SCAQMD Staff
Wayne Nastri	SCAQMD Staff
Robert Paud	SCAQMD Staff
Fabian Wesson	SCAQMD Staff
Jill Whynot	SCAQMD Staff

ATTACHMENT 2a

Legislative Proposal to Enhance Smog Abatement Fee

Background: Starting in FY 1998-99, the Carl Moyer Program (CMP) was funded on an annual basis for 6 years as part of the state Budget. Due to the success of the CMP the Legislature approved SB 1107 & AB 923 in 2004, which provided continuous funding for the implementation of the CMP. The main provision of SB1107 allowed for funding for the CMP through the creation of a smog abatement fee, which had no net fiscal impact on consumers. Specifically, SB 1107:

- Delayed vehicle inspection and maintenance (smog check) for new vehicles from the previously required 4 years to 6 years.
- The smog check fee of $48 (at the time), which the consumers were to pay for a smog check of their vehicle after 4 years would instead be collected as a smog abatement fee at a rate of $12/year over 4 years (thus, no increased fiscal impact to consumers).
- Under SB 1107, half of the annual smog abatement fee ($6/year), goes to the Air Pollution Control Fund (APCF) for CARB for the CMP. This results in about $65 million/yr from new car sales statewide, which CARB distributes among air districts based on an agreed formula between CARB and CAPCOA. (As part of this formula, the South Coast region receives about 44% of the funding, so about $28-$30 million per year.)

The principal argument behind SB 1107's approach was that all or most of the new cars with new technologies pass the smog check test after 4 years anyway. Generating funds this way allowed real and surplus emissions reductions with no additional cost to consumers.

SCAQMD Bill Proposal

- To increase annual incentive funding for the replacement and repower of on- and off-road heavy-duty vehicles and equipment under the CMP, which would support the 2017 AQMP efforts, SCAQMD proposes a legislative amendment to the law created by SB 1107.
- Pending confirmation from CARB, early indications are that a great majority of new vehicles pass their first smog check after 6 years as well, thus SCAQMD proposes a postponement of smog checks for new vehicles from 6 years to 8 years.
- Under the proposal, an additional $48 in smog abatement fees would be collected and deposited in the APCF for the CMP, in lieu of the same fee that would have otherwise been paid by consumers for a smog check of their vehicles after 6 years.
- CARB would then distribute the funds collected among air districts based on its agreed upon methodology with CAPCOA.

Benefits:

- The proposed bill would direct all (not half) of the new fee to the APCF, thus increasing funding for the CMP by three-fold.
- The enhanced smog abatement fee would have no fiscal impact on consumers, since it only diverts funds from smog check to the APCF.
- Generating funds this way allows real and surplus emissions reductions, through CMP, and creates SIP credits through early emission reductions.
- This increases funding for more effective diesel PM and NOx emissions reductions from heavy duty vehicles, instead of attempting to just reduce emissions from gasoline vehicles that generally pass a smog check after 6 years anyway.
- Unlike the smog check program, which applies generally throughout California, this increase in CMP funds could be better directed and more specifically utilized in areas, such as disadvantaged communities, to reduce direct exposure to heavy duty diesel vehicle emissions.
- Increased job creation and manufacturing in the clean transportation technology sector.

ATTACHMENT 2b

Smog Abatement Fee Chart

The chart below shows how the additional $48 from the sixth year Smog Check will be redirected and collected as Smog Abatement Fee. The additional $48 is distributed in six years with additional $4 in years 1 through 4, and additional $16 in years 5 and 6. As shown at the bottom of the table BAR's portion remains unchanged, but ARB's portion for the Carl Moyer Program triples from the current $24 to $72.

Year	Current Smog Check Fee	Current Smog Abatement Fee		Proposed Smog Check Fee	Proposed Smog Abatement Fee	
		Total Annual	Breakdown		Total Annual	Breakdown
1	0	$12	$6 to ARB $6 to BAR	0	$16	$10 to ARB $6 to BAR
2	0	$12	$6 to ARB $6 to BAR	0	$16	$10 to ARB $6 to BAR
3	0	$12	$6 to ARB $6 to BAR	0	$16	$10 to ARB $6 to BAR
4	0	$12	$6 to ARB $6 to BAR	0	$16	$10 to ARB $6 to BAR
5	0	0	0	0	$16	$16 to ARB 0 to BAR
6	$48	0	0	0	$16	$16 to ARB 0 to BAR
Total	**$48**	**$48**	**$24 to ARB $24 to BAR**	**0**	**$96**	**$72 to ARB $24 to BAR**

Total Consumer Cost	$96	$96

ATTACHMENT 2c

Smog Abatement Fee

Health and Safety Code Section 44011(a)(4) is amended to read as follows:

(4) Beginning January 1, 2005, any motor vehicle up to six model -years old, and beginning January 1, 2018, any motor vehicle up to eight model-years old.

Health and Safety Code Section 44091.1(a) is amended to read as follows:

(a) The revenue generated by ten ~~six~~ dollars ($10 ~~6~~) of the fee for the first four years and all of the fee for the next two years shall be deposited in the Air Pollution Control Fund, and shall be available for expenditure, upon appropriation by the Legislature to fund the Carl Moyer Memorial Air Quality Standards Attainment Program (Chapter 9, commencing with section 44275) to the extent that the state board or a participating district determines the moneys are expended to mitigate or remediate the harm caused by the type of motor vehicle on which the fee is imposed.

Health and Safety Code Section 44060(d)(1) is amended to read as follows:

(d)(1) Motor vehicles that exempted under paragraph (4) of subdivision (a) of Section 44011 shall be subject to an annual smog abatement fee of sixteen ~~twelve~~ dollars ($16 ~~12~~) for the first six years. *[Note: Remainder of paragraph is unchanged]*.

ATTACHMENT 3

Legislative Proposal to Create Port Container Cargo Fee

Summary: This bill imposes a fee on container cargo imported and exported through the ports of Long Beach, Los Angeles, and Oakland in an amount of $100 per twenty-foot equivalent unit (TEU). This bill requires the fee revenues to be used to mitigate the air quality impacts associated with the movement of freight in and out of the three ports. Also, this bill specifies the processes for determining which mitigation projects shall be funded with fee revenue.

Specifically this bill:

1. Requires the Ports of Long Beach, Los Angeles and Oakland, beginning July 1, 2018, to assess a user fee on the owner of container cargo moving through the port in the amount of one hundred dollars ($100) per TEU.

2. Requires the three ports to collect the fee twice a year, with all fees directed to mitigate air pollution caused by cargo movement.

3. Specifies that SCAQMD, in consultation with the Port of Los Angeles and the Port of Long Beach, shall develop the list of air quality projects in the South Coast region.

4. Directs the air districts and ports, when developing the air quality project list to give the highest priority to the replacement, repowering, or retrofitting of heavy-duty diesel vehicles that move cargo containers to and from the ports, not otherwise required by any federal or state law or regulation.

5. Authorizes ports to issue revenue bonds to finance mitigation projects.

Based on estimates in 2008-09, this fee could potentially generate revenue in the range of $1.1 billion annually, generated by the maximum $100 per TEU fee on containerized cargo imposed by the Ports of Los Angeles and Long Beach.

The ports of Los Angeles, Long Beach, and Oakland are the nation's first, second, and fourth largest ports, respectively, and are projected to experience growth in the future. Further:

1. According to a 2006 report by the ARB, pollution from our state's ports causes 2,400 premature deaths annually.

2. A disproportionate number of communities impacted by port pollution are low-income communities of color, the state currently shoulders much of these port-caused health costs.

4. The ports and freight transport operations are a large source of particulate matter (PM) and nitrogen oxide (NOx) emissions in the state, producing more diesel PM than all passenger vehicles, off-road equipment and stationary sources combined.

5. Southern California risks losing billions in federal highway funds if federal Clean Air Act standards are not met. The basin continues to face significant challenges in attaining federal ozone and particulate matter standards.

6. The Los Angeles and Long Beach ports move approximately 40 percent of the nation's cargo. The Los Angeles/Long Beach port complex is the largest port complex in the United States and is projected to see cargo approximately double by 2035. The ports are the single largest source of air pollution in the South Coast Basin.

Opponents of this bill, generally wholesalers or retailers who own the cargo being imported and exported through the ports, may oppose on two grounds: they claim that imposing the fee as proposed in this bill 1) may violate the commerce clause of the United States Constitution and 2) increases the costs of importing and exporting through these ports which may increase costs to consumers and cause retailers to ship their cargo through other ports. Regarding the commerce clause issue, Legislative Counsel concluded, regarding an earlier bill that would have imposed a container cargo fee, that "there is not federal legislation relating to the subjects addressed under [this bill]. Thus, it is our view that, generally, the state may legislate in this area" and that "we conclude that the charge proposed under [this bill] would survive scrutiny under the commerce clause of the United States Constitution as a legitimate regulatory fee imposed under the police power of the state."

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 29

REPORT: Mobile Source Committee

SYNOPSIS: The Mobile Source Committee met on Friday, February 17, 2017. Following is a summary of that meeting. The next Mobile Source Committee meeting is scheduled for Friday, March 17, 2017 at 9:00 a.m.

RECOMMENDED ACTION:
Receive and file.

Dr. Clarke E. Parker, Sr., Chair
Mobile Source Committee

PMF:afm

Attendance
Committee Vice Chair Dr. Joseph Lyou and Committee Members Sheila Kuehl, Larry McCallon and Judith Mitchell attended at SCAQMD headquarters. Committee Member Marion Ashley attended via teleconference as a listen-only participant as his location was not agendized for this meeting. Committee Chair Dr. Clark E. Parker, Sr. participated via videoconference and called the meeting to order at 9:00 a.m.

ACTION ITEM:

1) **Approve Year-Round Electric Lawn Mower Rebate Program and Authorize Rebate Payments**
Vasken Yardemian, Sr. Staff Specialist, presented on this item. Staff proposed to modify the program by offering consumers year-round access to purchase a new battery-powered electric lawn mower on a first-come-first-served basis. Dr. Parker asked about the leftover funds from the program during the last two years. Staff responded that any unspent funds will be reallocated back to the Rule 2202 AQIP account. Councilmember McCallon asked if this was ongoing program and if any marketing and advertising will be done. Staff responded that they are working with large hardware and home improvement centers to advertise the program.

Councilmember Mitchell thought that the program was too involved as a 3-step process, and also that the scrappers or people to take their mower for scrapping are limited. She was also concerned about fraud. Staff clarified that they have long-standing relationships with the scrappers through other incentive programs. Supervisor Kuehl asked if staff could ask the retailers to scrap the mowers at their locations by paying a fee or incentive to the retailers to scrap the mowers for the SCAQMD. Mr. Nastri mentioned that this was a new approach based on recent program outcomes and that staff will provide an update in 6 months to the committee on the program progress. The update would include a summary on program implementation and staff can conduct a survey to ask how SCAQMD may be able to make the process easier. Staff would also address any fraud concerns and ease of implementation.

Moved by Lyou; seconded by McCallon; unanimously approved.

Ayes: Parker, Lyou, Kuehl, McCallon, and Mitchell
Noes: None
Absent: None

INFORMATIONAL ITEM:

2) In-Use Emission Measurements of Heavy-Duty Trucks

Dr. Kent Johnson from UCR, CE-CERT, presented on recent emissions from heavy-duty natural gas vehicles over different duty-cycles. This was a continuation of a program initiated by the SCAQMD in 2011 and has been updated to include the new near-zero emission 0.02 g/bhp-hr NOx 8.9L natural gas engine. The results show that this new engine performs at or below the 0.02 g/bhp-hr NOx certification level, which is not the case for diesel engines, which ranged from 4 to 9 times higher than their 0.2 g/bhp-hr certification levels, depending on duty-cycle. Dr. Johnson also described the improvement in battery electric truck technologies and the potential for geo-fencing to reduce emissions in highly impacted communities.

Ms. Mitchell asked for clarification on geo-fencing. Staff answered that Volvo has implemented this technology in SCAQMD's co-sponsored plug-in hybrid project, where geo-fencing uses GPS and telematics to automatically limit a hybrid truck to electric-only mode within given port boundaries, for example, then turn the engine back on to charge the battery pack when the vehicle is outside of these areas.

Dr. Parker supported the use of near-zero heavy-duty natural gas engines as one of our portfolio of tools to meet air quality goals and will support the use of NG and RNG on his upcoming trip to Washington DC.

Dr. Lyou stated his viewpoint that the near-zero NG engine is likely the only technology pathway capable of achieving large NOx emission reductions in time to meet the 2023 federal standards.

WRITTEN REPORTS:

3) **Rule 2202 Activity Report**
The report was received as submitted.

4) **Monthly Report on Environmental Justice Initiatives – CEQA Document Commenting Update**
The report was received as submitted.

OTHER BUSINESS:
None

PUBLIC COMMENTS:
None

The meeting was adjourned at approximately 10:23 a.m.

Attachment
Attendance Roster

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
MOBILE SOURCE COMMITTEE MEETING
Attendance Roster – February 17, 2017

Dr. Clark E. Parker, Sr. (Videoconference)	SCAQMD Governing Board
Dr. Joseph Lyou	SCAQMD Governing Board
Supervisor Marion Ashley (Teleconference)	(SCAQMD Governing Board)
Supervisor Sheila Kuehl	SCAQMD Governing Board
Mayor Pro Tem Larry McCallon	SCAQMD Governing Board
Councilmember Judith Mitchell	SCAQMD Governing Board
Board Consultant Mark Abramowitz	SCAQMD Governing Board (Lyou)
Board Assistant David Czamanske	SCAQMD Governing Board (Cacciotti)
Board Consultant Ron Ketcham	SCAQMD Governing Board (McCallon)
Board Consultant Diane Moss	SCAQMD Governing Board (Kuehl)
Wayne Nastri	SCAQMD Staff
Jill Whynot	SCAQMD Staff
Philip Fine	SCAQMD Staff
Barbara Baird	SCAQMD Staff
Matt Miyasato	SCAQMD Staff
Henry Hogo	SCAQMD Staff
Derrick Alatorre	SCAQMD Staff
Fred Minassian	SCAQMD Staff
Laki Tisopulos	SCAQMD Staff
Fabian Wesson	SCAQMD Staff
Sam Atwood	SCAQMD Staff
Arlene Farol	SCAQMD Staff
Carol Gomez	SCAQMD Staff
Jennifer Moore	SCAQMD Staff
Lijin Sun	SCAQMD Staff
Daniel Wong	SCAQMD Staff
Jillian Wong	SCAQMD Staff
William LaMarr	California Small Business Alliance
Bill Pearce	The Boeing Company
David Rothbart	L.A. Sanitation Districts
Susan Stark	Tesoro

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 30

REPORT: Stationary Source Committee

SYNOPSIS: The Stationary Source Committee met Friday, February 17, 2017. Following is a summary of that meeting.

RECOMMENDED ACTION:
Receive and file.

Ben Benoit, Chair
Stationary Source Committee

LT:eb

Attendance
The meeting began at 10:35 a.m. In attendance at SCAQMD Headquarters were Committee Chair Ben Benoit, Committee Vice Chair Dr. Joseph Lyou, and Committee Members Judith Mitchell, and Sheila Kuehl. Committee Members Shawn Nelson and Janice Rutherford attended via videoconference.

ACTION ITEMS

1. **Home Rule Advisory Group Membership**
   Based on the Blue Ribbon Panel Recommendations and approval by the Board, Councilmember Judith Mitchell has requested the appointment of David Rothbart as her Community Representative to the Home Rule Advisory Group and this recommendation was submitted for the concurrence of this Committee.

   Supervisor Nelson joined the meeting at 10:40 a.m., and therefore did not participate in the vote on this item.

   Moved by Mitchell, seconded by Lyou; unanimously approved.

   Ayes: Benoit, Lyou, Kuehl, Mitchell and Rutherford
   Noes: None
   Absent: Nelson

2. **Add Equipment and Add/Delete Positions to Address Operational Needs in Science and Technology Advancement for Metals Monitoring and Analysis**
Assistant Deputy Executive Officer/Science and Technology Advancement Office (STA), Dr. Jason Low, presented on the need to enhance the SCAQMD monitoring and laboratory analysis capability and proposed to invest in new laboratory and field equipment and better align staffing resources to address the increasing demand for extensive monitoring of hexavalent chromium (Cr6) and other metals in the City of Paramount and potentially other parts of the Basin. He indicated that this action is partially funded by U.S. EPA.

In response to questions from Councilmember Mitchell and Dr. Lyou, Dr. Low clarified the laboratory analysis technique of Ion Chromatography and the Scanning Electron Microscopy (SEM) and the number of samplers that could be purchased through the proposed action.

In response to Mayor Pro Tem Benoit's inquiry relative the cost of meteorology systems, Dr. Low replied that the systems are designed to meet stringent U.S. EPA criteria and requirements.

Mayor Pro Tem Benoit inquired how close SCAQMD was in putting the data on a GIS map. Mr. Nastri reported that work is in progress and there would be more to report next month.

Councilmember Mitchell inquired if SCAG's database (extensive GIS system) could be leased or rented. Mr. Nastri indicated there would be licensing requirements that would need to be addressed.

Moved by Mitchell, seconded by Kuehl; unanimously approved.

Ayes: Benoit, Lyou, Kuehl, Mitchell, Nelson and Rutherford
Noes: None
Absent: None

INFORMATIONAL ITEMS

3. **Update on District Activities Related to Hexavalent Chromium Emissions in the City of Paramount**
Executive Officer Wayne Nastri, and Dr. Low provided an overview of the unprecedented SCAQMD monitoring, analysis, and compliance efforts regarding elevated ambient Cr6 emissions measured in the City of Paramount and coordination with other agencies. Currently, two facilities are operating

under Stipulated Orders for Abatement. Also, staff discussed next steps for potential expansion to other areas in the Basin and the required resources that would be associated with those efforts.

Supervisor Kuehl asked for an explanation of steps between monitoring and enforcement against other potential facilities that would be emitting Cr6. Mr. Nastri indicated the monitoring data is reviewed by Compliance & Enforcement staff and that inspectors visit and inspect the facilities and issue Notices to Comply or Notices of Violation, if appropriate. He also stated that the Stipulated Order for Abatement includes a provision of "John Does" to potentially add other facilities.

Supervisor Kuehl asked if there are difficulties tying emissions to a particular business. Bill Wong, Principal Deputy District Counsel, replied that in this situation there was strong evidence from results of onsite monitoring to tie elevated ambient measurements to two facilities (Aerocraft and Anaplex).

Dr. Lyou then asked if this would change given the proposed new legislation on 'cease and desist' authority. Mr. Nastri replied that the Aerocraft and Anaplex decision occurred before the holidays and the Hearing Board was not operating. Other agencies such as U.S. EPA, DTSC, etc. have imminent and substantial endangerment authority and this authority is typically exerted a small number of times. However, he stated he believes that it would be very helpful for SCAQMD to have this authority in extreme cases.

Dr. Matt Miyasato, Deputy Executive Officer/STA, mentioned that resources are limited and maintaining measurement/monitoring activities at current levels is very costly. Mr. Nastri added that moving forward, more resources would be required.

Dr. Lyou indicated that the staff response for this issue was very good and thorough and will help in Sacramento when the agency is requesting resources. He also requested an overview of the proposed rules that would be coming up to address these issues.

Dr. Philip Fine, Deputy Executive Officer/Planning, Rule Development & Area Sources, indicated that Proposed Rule 1430 deals with metal grinding at forging facilities and added that there is information learned from this experience that could potentially be incorporated into future rules. Dr. Fine continued that there is an amendment to Rule 1469 (chrome plating rule), in the Rule Forecast Report.

Councilmember Mitchell stated that the good that came out of the Paramount situation is the improved communication with cities and the realization that many businesses that required permits had not gotten them.

Mr. Nastri stated that there have been discussions with Paramount and the various cities regarding permitting. He indicated that the Legislative, Public Affairs & Media staff will elevate awareness in the COGs of the necessity for permits related to the SCAQMD.

Mayor Pro Tem Benoit indicated that in his city they are hiring a consultant to help identify businesses at the front end.

Dr. Cher Snyder, Assistant Deputy Executive Officer/Compliance & Enforcement, indicated that door to door inspections were conducted along with facility inspections guided from a list from the City of Paramount.

4. Status Report on Reg. XIII

Deputy Executive Officer/Engineering and Permitting Dr. Laki Tisopulos gave a status report on Regulation XIII, specifically the preliminary determination of federal equivalency of the District's New Source Review Program (NSR). Dr. Tisopulos started out his presentation noting that NSR is a regulation that identifies the requirements that apply to new and modified facilities. Two main components of the NSR program that were briefly discussed include the requirement for facilities to install the Best Available Control Technology (BACT) to reduce emissions, and the requirement for facilities to provide emission offsets, in the form of emission reduction credits (ERC), which are produced through actual emission reductions achieved by the facility or purchased on the open market. The program is designed to allow for future growth in the air basin, and to keep the environment whole. Future growth allowance is achieved through facilities having open market access to ERCs on an as-needed basis, and the environment is kept whole through an offset mechanism which requires offsets be surrendered at a 1.2 to 1.0 ratio of ERCs to emission increases, which essentially retires 1.2 pounds of offsets for every pound of emission increase, ultimately lowering emissions in the air basin over time.

The District NSR program differs from the federal NSR program and for that reason U.S. EPA requires that a semi-annual demonstration, in aggregate, be made to ensure that the District NSR program is equivalent or more stringent than the federal NSR program. District Rule 1315, adopted on February 4, 2011, establishes the accounting methodology used in the demonstration of NSR equivalency. Under the guidelines outlined in Rule 1315, the District tracks both credits to, and debits from, the District's internal offset accounts on an annual basis, by pollutant, and maintains an annual running balance of all such events. Credits are associated with emission reductions and debits are associated with emission increases. When the running balance for a given calendar year is positive, the District NSR program is considered to be equivalent to the federal NSR program and equivalency has been demonstrated. In addition to demonstrating equivalency for any reporting calendar year, Rule 1315 also requires that projections of the running balance be made for two calendar years following the reporting calendar year. Projections are based on a five-year average of historic reporting data, and the projected running balances similarly need to show that federal equivalency is forecasted.

The preliminary running balance for calendar year 2015 is positive for all criteria pollutants, effectively demonstrating a preliminary determination of equivalency of the District NSR program to the federal NSR program for that calendar year. Additionally, the projected ending balances for both calendar years 2016 and 2017 are positive, demonstrating that equivalency is projected for both of those calendar years.

5. Annual RECLAIM Audit Report for Compliance Year 2015

Dr. Laki Tisopulos, presented the annual report on the NOx and SOx RECLAIM program prepared in accordance with Rule 2015 – Backstop Provisions. The report assesses emission reductions, availability of RECLAIM Trading Credits (RTCs) and their average annual prices, compliance issues, job impacts, and other measures of performance for the twenty-first year of this program. In addition, recent trends in trading future year RTCs are analyzed and presented in this report. Dr. Tisopulos concluded by stating that the RECLAIM program met all its program objectives and recommended that the Annual RECLAIM Audit Report for 2015 Compliance Year be presented to the Board for their approval.

Supervisor Kuehl noted that allocations and emissions have leveled out over the last few years. Staff explained that the NOx graph ends in 2015 so it doesn't show the impact of the NOx shave that was approved in late 2015. If the graph was extended into the future it would show a 45% reduction in NOx allocations for the period of 2016 through 2022. Dr. Joseph Lyou and Supervisor Kuehl requested that the graph be revised to include 2016 through 2022.

Supervisor Kuehl questioned whether the market has too many trading credits. Staff responded that NOx and SOx emissions are 25% and 26% below allocations, respectively, but this margin is expected to come down in future years due to the NOx shave that reduces NOx Allocations by 45%. Dr. Lyou noted that the compliance margin for the program should be 10% and not 25% and that a 10% compliance margin was built into the 2007 NOx Shave. Staff explained that the projections in 2007 included an allowance for growth in addition to the 10% compliance margin but actual growth since 2007 has not been as robust as projected.

Supervisor Kuehl ask for clarification on the "No evidence of increased health risk" statement and questioned whether trades in certain areas could be causing toxic hot spots in those areas. She asked if there was any data mapping that illustrated where the credits are purchased for use so that hot spots could be identified. Staff responded that RTC purchase data is not mapped but NOx and SOx emissions are mapped to identify areas of high NOx and SOx emissions. With regards to the first question, staff replied that qualifying language is used because the impact of RECLAIM on health risk is complicated. RECLAIM is only one of numerous rules, regulations, permit conditions, etc. that impact toxic emissions from RECLAIM facilities. Although there has been discussion regarding market-based regulations such as RECLAIM and GHG regulations contributing to local health risk due to facilities purchasing credits in lieu of installing emissions controls, there is no evidence that RECLAIM has caused higher health risk near RECLAIM facilities. Dr. Lyou noted that most RECLAIM facilities are located in environmental justice areas so RTCs are essentially traded from one EJ area to another EJ area.

Dr. Lyou asked if there are any steps that can be taken to increase the compliance rates from 94% or 97% to 100%. Staff noted that total amount of the exceedances on a mass basis is small and that each exceedance is subtracted from the violating facility's future years allocations. Dr. Lyou asked if there is a way to help facilities project their RTC needs or are the facilities solely responsible. Staff confirmed that the facilities are responsible for determining their own RTC needs and that an NOV is issued to facilities that fail to hold adequate RTCs to reconcile their emissions.

Dr. Lyou inquired about the $200,000 low-price threshold for IYB prices that was established in a recent RECLAIM amendment. Staff advised that the $200,000 threshold is not effective until Compliance Year 2019.

6. Permit Application Backlog Reduction Quarterly Report

Dr. Laki Tisopulos gave the first quarterly progress report on implementing the Permit Application Backlog Reduction Plan, approved by the Board in October 2016. During the past six months, implementation of the steps outlined in this plan have already helped to reduce the pending applications by 25%, which is ahead of the pace required to meet the plan's two-year goal. Reduction by pending applications to date equates to approximately 50% of the backlog reduction target.

Significant progress has also been made in developing online permitting tools for automotive spray booths, service stations, dry cleaners, and online filing of key permit application forms. The business processes have been mapped, and functioning prototypes are projected to be shared with stakeholders in July 2017.

In an effort to increase transparency, a permit 'dashboard' graphic was developed and is available online that shows the progress of the backlog reduction by giving a snapshot of the pending applications on a monthly basis. Also, two Permit Streamlining Task Force meetings have been held, with another scheduled for March 1, 2017.

Supervisor Rutherford commended staff's efforts.

Bill LaMarr, Executive Director, California Small Business Alliance, stated that this was the second serious backlog reduction effort, with the other occurring about ten years ago. The inability for a small business to get a permit in a timely manner is very costly. They are paying leases on their buildings, and cannot legally operate until they receive their permit. Mr. LaMarr stated that no one has explained satisfactorily how this backlog happened, and questioned if it is likely to happen again. Mr. Nastri stated that the historical high staff vacancy rate was a major factor. There were concerns with the budget and the economy in the past, which hindered hiring. Lately, staff has been able to reduce the vacancy rate with new hires. As the work force ages, we are losing many experienced engineers to retirement. With this in mind, staff will continue to address the vacancy rate. Mr. Nastri added that the dashboard provides anyone the ability to see the backlog status at any time, which heightens accountability and transparency.

David Rothbart, representing the Southern California Alliance of Publicly Owned Treatment Works, thanked the staff for their efforts to date, but stated that the future of RECLAIM could greatly impact the backlog by thousands of permits. He would like staff to continue to focus on how to get permit applications through the process as quickly as possible. He stated that one of the major roadblocks is that the permit process often can be adversarial. If that is eliminated, it would go a long way to speeding up the time it takes to process a permit.

Rita Loof, representing RadTech, reiterated a comment that Supervisor Rutherford has made in the past to "not sweat the small stuff." Rule 219 should be used more effectively. If equipment is known to meet emission targets by a factor of 10, for example, permits should not be required.

WRITTEN REPORTS

All written reports were acknowledged by the Committee.

OTHER BUSINESS

Dr. Lyou requested that a presentation on the joint study reported on at the American Geophysical Union conference in December 2016, regarding the Optical Remote Sensing Technology study of refineries monitoring VOC emissions, be given at the next meeting.

PUBLIC COMMENTS

There were no public comments.

The next Stationary Source Committee meeting is scheduled for March 17, 2017. The meeting was adjourned at 12:05 p.m.

Attachment
Attendance Roster

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
STATIONARY SOURCE COMMITTEE
February 17, 2017
Attendance Roster (Voluntary)

Mayor Pro Tem Ben Benoit	SCAQMD Governing Board
Dr. Joseph Lyou	SCAQMD Governing Board
Councilmember Judith Mitchell	SCAQMD Governing Board
Supervisor Sheila Kuehl	SCAQMD Governing Board
Supervisor Janice Rutherford (Videoconference)	SCAQMD Governing Board
Supervisor Shawn Nelson (Videoconference)	SCAQMD Governing Board
Board Consultant David Czamanske	SCAQMD Governing Board (Cacciotti)
Board Consultant Ron Ketcham	SCAQMD Governing Board (McCallon)
Wayne Nastri	SCAQMD staff
Barbara Baird	SCAQMD staff
Philip Fine	SCAQMD staff
Laki Tisopulos	SCAQMD staff
Jill Whynot	SCAQMD staff
Kurt Wiese	SCAQMD staff
Matt Miyasato	SCAQMD staff
Amir Dejbakhsh	SCAQMD staff
Bill LaMarr	California Small Business Alliance
David Rothbart	L.A. County Sanitation Districts
Rita Loof	RadTech
Susan Stark	Tesoro
Bill Pearce	The Boeing Company

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 31

REPORT: Technology Committee

SYNOPSIS: The Technology Committee met on February 17, 2017. 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 held on March 17, 2017.

RECOMMENDED ACTION:
Receive and file.

Joe Buscaino
Technology Committee Chair

MMM:pmk

Attendance: Councilmember Joe Buscaino and Supervisor Janice Rutherford participated by videoconference. Supervisor Sheila Kuehl, Mayor Pro Tem Larry McCallon, Councilmember Judith Mitchell and Councilmember Dwight Robinson were in attendance at SCAQMD headquarters.

MARCH BOARD AGENDA ITEMS

There being no objection, the Committee took Item #4 on consent. On the motion of Kuehl, seconded by Mitchell, the committee unanimously approved agenda item 4.

Ayes: Buscaino, Kuehl, McCallon, Mitchell, Robinson and Rutherford
Noes: None
Absent: None

1. **Execute Contract to Develop and Demonstrate Electric School Buses with Vehicle-to-Grid Capability**

   DOE recently awarded the Blue Bird Body Company, Inc. $4,902,237 for the development and demonstration of electric school buses with vehicle-to-grid (V2G) capability. Blue Bird Body Company proposes to develop and manufacture V2G all-battery electric school buses and demonstrate them in the Rialto Unified School District (USD). Staff proposes to cost-share this project. This action is to execute a contract with Blue Bird Body Company for the development, manufacture and demonstration of electric school buses in an amount not to exceed $1,900,000 from the Lower-Emission School Bus Fund (33).

   Councilmember Mitchell asked if the technology developed under this project is transferable to other vehicles or applications. Staff affirmed that the technology can be transferred to similarly-domiciled fleets, such as UPS.

   Mayor Pro Tem McCallon inquired about NOx reductions between a CNG school bus and electric school bus, and if all school buses were electric. Staff responded that the anticipated reductions would be the difference between current CNG engines and zero emissions. Staff further emphasized that the reductions would be greater when replacing older diesel buses. Executive Officer Wayne Nastri suggested that staff report back to the Committee on cumulative potential NOx reductions, as well.

   Moved by Robinson; seconded by Kuehl; unanimously approved.

   Ayes: Buscaino, Kuehl, McCallon, Mitchell, Robinson and Rutherford
   Noes: None
   Absent: None

2. **Execute Contract to Develop and Demonstrate Medium-Heavy Duty (Class 5-7) Plug-in Hybrid Electric Vehicles for Work Truck Applications**

   DOE recently awarded $2,932,193 to Odyne Systems, LLC, for the development and demonstration of a medium-heavy duty (Class 5-7) plug-in hybrid electric vehicle (PHEV) for work truck applications. Odyne proposes to develop and demonstrate medium-heavy duty (Class 5-7) PHEV work trucks with reduced fuel consumption and fully electrified jobsite functions. Staff proposes to cost-share this project. This action is to execute a contract with Odyne Systems, LLC, for the design, manufacture and demonstration of medium-heavy duty (Class 5-7) PHEV work trucks in an amount not to exceed $900,000 from the Clean Fuel Fund (31).

Moved by Mitchell; seconded by Kuehl; unanimously approved.

Ayes: Buscaino, Kuehl, McCallon, Mitchell, Robinson and Rutherford
Noes: None
Absent: None

3. **Create Special Revenue Fund, Recognize and Transfer Funds, Execute Agreement for SCAQMD to Act as Supplemental Environmental Project Implementer for Installation of Air Filtration Systems, Execute Contract and Reimburse General Fund for Administrative Costs**
CARB and the Burlington Northern Santa Fe Railway Company (BNSF) are executing a Supplemental Environmental Project (SEP) agreement to install air filtration systems at school(s) in a local Environmental Justice community. Both parties have requested SCAQMD act as the SEP Implementer. These actions are to: 1) create the Air Filtration Fund (75); 2) recognize up to $625,000 from BNSF into the Air Filtration Fund (75); and 3) transfer up to $625,000 as a temporary loan from the Clean Fuels Fund (31) to the Air Filtration Fund (75). Furthermore, these actions are to execute an agreement with BNSF for SCAQMD to act as the SEP Implementer for this project, execute a contract with IQAir North America for installation of air filtration systems in an amount not to exceed $593,750 and reimburse the General Fund for administrative costs up to $31,250 from the Air Filtration Fund (75).

Councilmember Robinson recused himself due to financial interest in the Burlington Northern Santa Fe Railway Company that is materially affected by this item.

Supervisor Rutherford suggested that staff evaluate a similar air filtration program for residences located in San Bernardino. Staff committed to evaluate potential opportunities and funding sources and report back to the Committee.

Moved by Kuehl; seconded by Mitchell; unanimously approved.

Ayes: Buscaino, Kuehl, McCallon, Mitchell and Rutherford
Noes: None
Abstain: Robinson
Absent: None

4. **Transfer Funds, Execute Contract to Develop and Demonstrate Vessel Performance Management Software and Equipment and Amend Award**
The California State University Maritime Academy proposes to demonstrate a technology capable of harvesting high altitude wind energy while employing a vessel performance optimization system. The first two phases of the project includes the design and installation of the performance management software and

equipment followed by demonstration of the equipment with performance evaluation of its fuel and emissions reductions capabilities. Staff proposes to cost-share phase 2 of this project with the California State University Maritime Academy, Maritime Administration and Bay Area Air Quality Management District. These actions are to transfer $50,086 from the BP ARCO Settlement Projects Fund (46) into the Clean Fuels Fund (31), and execute a contract with the California State University Maritime Academy for the design and demonstration of vessel performance management software and equipment in an amount not to exceed $50,086 from the Clean Fuels Fund (31). Finally, this action is to amend a contractor's name from Ricardo Solutions to Ricardo, Inc., for a prior award.

5. **Approve and Adopt Technology Advancement Office Clean Fuels Program 2016 Annual Report and 2017 Plan Update and Resolution, and Receive and File and Approve and Adopt Revised Membership of Technology Advancement and Clean Fuels Advisory Groups**

   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 2017 Clean Fuels Program Draft Plan Update was presented to the Technology Committee for review and comment at its October 21, 2016 meeting. This action is to approve and adopt the final Technology Advancement Clean Fuels Program Annual Report for 2016 and 2017 Plan Update as well as the resolution finding that proposed projects do not duplicate any past or present programs. This action is to also receive and file membership changes to the Technology Advancement Advisory Group and approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group.

   Councilmember Mitchell inquired about the reasoning behind increased funding allocation for the engine systems. Staff responded that the increased funding allocation will further support efforts for near-zero heavy-duty engine development efforts, especially for large displacement engines, and provide support for the state and federal efforts towards lower heavy-duty engine standards.

   Supervisor Kuehl commented that secondary use and safe practices for recycling of batteries should be evaluated, considering the growth in battery electric vehicles. Staff indicated that secondary use of batteries is already underway, especially for stationary energy storage.

   Councilmember Robinson provided support for the type and scope of projects that are part of the Clean Fuels Fund.

Moved by Robinson; seconded by Mitchell; unanimously approved.

Ayes: Buscaino, Kuehl, McCallon, Mitchell, Robinson and Rutherford
Noes: None
Absent: None

6. Other Business
There was no other business.

7. Public Comments
There were no public comments.

Next Meeting: March 17, 2017

Attachment
Attendance

ATTACHMENT

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
TECHNOLOGY COMMITTEE MEETING
Attendance – February 17, 2017

Councilmember Joe Buscaino (via videoconference)	SCAQMD Governing Board
Supervisor Sheila Kuehl	SCAQMD Governing Board
Mayor Pro Tem Larry McCallon	SCAQMD Governing Board
Councilmember Judith Mitchell	SCAQMD Governing Board
Councilmember Dwight Robinson	SCAQMD Governing Board
Supervisor Janice Rutherford (via videoconference)	SCAQMD Governing Board
Mark Abramowitz	Board Consultant (Lyou)
David Czamanske	Board Consultant (Cacciotti)
Ron Ketcham	Board Consultant (McCallon)
Diane Moss	Board Consultant (Kuehl)
Wayne Nastri	SCAQMD Staff
Derrick Alatorre	SCAQMD Staff
Fabian Wesson	SCAQMD Staff
Ruby Fernandez	SCAQMD Staff
Matt Miyasato	SCAQMD Staff
Fred Minassian	SCAQMD Staff
Naveen Berry	SCAQMD Staff
Dean Saito	SCAQMD Staff
Seungbum Ha	SCAQMD Staff
Drue Hargis	SCAQMD Staff
Joseph Impullitti	SCAQMD Staff
Patricia Kwon	SCAQMD Staff
Joseph Lopat	SCAQMD Staff
Vicki White	SCAQMD Staff
Patrick Chandler	SCAQMD Staff
Gregory Rowley	SCAQMD Staff
Angelica Enriquez	SCAQMD Staff
Pat Krayser	SCAQMD Staff
Timothy Lippman	Los Angeles County
Katy Young	Los Angeles County
Tom Gross	Southern California Edison
Susan Stark	Tesoro

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 32

REPORT: Mobile Source Air Pollution Reduction Review Committee

SYNOPSIS: Below is a summary of key issues addressed at the MSRC's meeting on February 16, 2017. The next meeting is scheduled for Thursday, March 16, 2017, at 2:00 p.m., in Conference Room CC8.

RECOMMENDED ACTION:
Receive and file.

Veera Tyagi
Senior Deputy District Counsel

MMM:HH:AP

Meeting Minutes Approved

The MSRC unanimously approved the minutes of the November 17, 2016 and December 15, 2016 meetings. Those approved minutes are attached for your information *(Attachments 1 and 2)*.

FYs 2014-16 Near-Zero Heavy-Duty Natural Gas Engine Incentive Program

As part of the FYs 2014-16 Work Program, the MSRC allocated $10,000,000 to provide funds towards the purchase cost of the Cummins Westport ISL G Near Zero natural gas engine. This engine is certified to the CARB Optional NOx standard of 0.02 g/bhp-hr. A Program Announcement, #PA2016-11, was developed and released on June 3, 2016. Eligible vehicle types include urban transit buses and refuse collection trucks. For qualifying transit buses, the MSRC allocated $7.5 million, with a maximum per-entity award amount of $1.875 million, and will award $15,000 per vehicle for either new bus purchases or the re-power (engine replacement) of existing buses. For qualifying refuse trucks, the MSRC allocated $2.5 million, with a maximum per-entity award amount of $625,000, and will award $25,000 per vehicle, for re-powers only. The Program Announcement included an open application period which commenced July 5, 2016 and closed January 6, 2017. To date, the MSRC has awarded a total of $5,215,000. One additional application was received by the closing date. The MSRC-TAC recommended, and the MSRC approved, a contract award to Long Beach Transit in an

amount not to exceed $600,000 for the purchase of 40 new transit buses, as part of the FYs 2014-16 AB 2766 Discretionary Fund Work Program. This award will be considered by the SCAQMD Board at its March 3, 2017 meeting.

FYs 2014-16 Enhanced Fleet Modernization Program

The EFMP is a vehicle retirement and replacement program authorized by the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (AB 118). The program focuses on providing greater incentives to eligible low- and middle-income owners of older vehicles to scrap their existing vehicle and receive a voucher either to help acquire a newer vehicle or cover the cost for transit passes or participation in car-sharing programs. In conjunction, the EFMP Plus-Up supplements the EFMP by increasing incentives for certain advanced technology replacement vehicles.

The MSRC previously allocated $800,000 (approved by the Board in December 2014) and up to $6,201,000 (approved by the Board in October 2015) to augment the SCAQMD funds to implement the EFMP and EFMP Plus-Up as an element of the FYs 2014-16 Work Program. The later increment of funding was designated for the voucher program only, to help match the funding for the EFMP Plus-Up portion of the program. A portion of this original match funding has not yet been utilized. The MSRC received an update on the program. The MSRC-TAC recommended, and the MSRC approved, the reallocation of $4,000,000 to the FYs 2016-18 Work Program, to be subsequently reprogrammed as part of the Work Program development process. The remaining balance of $651,000 may continue to be used for the voucher portion of the program in current and future years. This item will be considered by the SCAQMD Board at its meeting on March 3, 2017.

FYs 2016-18 Major Event Center Transportation Program

The MSRC approved release of Program Announcement #PA2017-05 under the FYs 2016-18 Work Program. The Program Announcement, with an initial targeted funding amount of $5,000,000, solicits applications from qualifying major event centers and/or transportation providers to provide transportation service for venues not currently served by sufficient transportation service. To qualify, an event center must have an occupancy capacity of at least 7,500, and an average event attendance of at least 5,000. The applicant must demonstrate that the center is impacted by traffic to the extent that the design capacity of the surrounding streets is exceeded. Applications may be submitted at any time from March 3, 2017 to March 30, 2018, and projects will be brought to the MSRC for consideration of awards throughout the application this period. The maximum total funding award to any entity shall not exceed $2,500,000, and the maximum amount which can be applied to transportation programs at any one event center is $1,500,000. The MSRC can waive these maximum funding restrictions in the event the MSRC does not receive sufficient meritorious proposals from other bidders to

utilize the remaining funds, or if the MSRC allocates additional funds to the Program. The release of Program Announcement #PA2017-05 will be considered by the SCAQMD Board at its March 3, 2017 meeting.

Contract Modification Request
FY 2011-12 Local Government Match Program

In August 2012, the MSRC approved an award to the City of Bellflower in an amount not to exceed $270,000 for the installation of 15 electric vehicle charging stations; this was subsequently modified to $170,000 for eight stations. The City now believes that fast chargers would be more popular, and experience a greater turnover, than the Level II charging stations specified by the contract. The City requested approval to substitute the installation of two fast chargers for the eight Level II chargers, coupled with a corresponding contract value reduction from $170,000 to $100,000. The MSRC considered and approved the City's requested contract modification. This contract modification will be considered by the SCAQMD Board at its March 3, 2017 meeting.

Received and Approved Final Reports

The MSRC received and unanimously approved four final report summaries this month as follows:

1. City of Pasadena, Contract #MS12080, which provided $225,000 for the expansion of existing CNG infrastructure;
2. Anaheim Transportation Network, Contract #MS14073, which provided $221,312 for Anaheim Resort Circulator Service;
3. County Sanitation Districts of Los Angeles County, Contract #MS14077, which provided $175,000 to construct a new limited-access CNG station; and
4. Orange County Transportation Authority, Contract #MS16095, which provided $694,645 to implement express bus service to Orange County Fair.

Contracts Administrator's Report

The MSRC's AB 2766 Contracts Administrator provides a written status report on all open contracts from FY 2004-05 through the present. The Contracts Administrator's Report for February, 2017 is attached *(Attachment 3)* for your information.

Attachments

Attachment 1 – Approved November 17, 2016 Meeting Minutes
Attachment 2 – Approved December 15, 2016 Meeting Minutes
Attachment 3 – February 2017 Contracts Administrator's Report

MOBILE SOURCE AIR POLLUTION REDUCTION REVIEW COMMITTEE
THURSDAY, NOVEMBER 17, 2016 MEETING MINUTES
21865 Copley Drive, Diamond, Bar, CA 91765- Conference Room CC-8

MEMBERS PRESENT:

(Vice Chair) Larry McCallon, representing SANBAG
Michael Antonovich, representing SCAQMD (via v/c)
Ben Benoit (Alt.), representing SCAQMD
Michael Carter (Alt.), representing CARB
Rex Richardson (Alt.), representing SCAG
Adam Rush (Alt.), representing Riverside County Transportation Commission
Dolores Roybal Saltarelli, representing Regional Rideshare Agency (via v/c)
Greg Winterbottom, representing OCTA
Mark Yamarone (Alt.), representing Los Angeles County MTA (via v/c)

MEMBERS ABSENT:

(Chair) Greg Pettis, representing RCTC
Jack Kitowski, representing California Air Resources Board
Michele Martinez, representing SCAG
Steve Veres, representing LA County MTA

OTHERS PRESENT:

David Czamanske, SCAQMD Governing Board Assistant (Cacciotti)
Lauren Dunlap, SoCalGas
Debra Mendelsohn, SCAQMD Board Assistant (Antonovich)
MSRC-TAC Member Dean Saito, SCAQMD
Ric Teano, OCTA
MSRC-TAC Chair Gretchen Hardison, City of Los Angeles (via v/c)
MSRC-TAC Member Kelly Lynn, SANBAG

SCAQMD STAFF & CONTRACTORS

Christina Kusnandar, Contracts Assistant
Angelica Enriquez, SCAQMD Staff
Ray Gorski, MSRC Technical Advisor-Contractor
John Kampa, Financial Analyst
Matt MacKenzie, MSRC Contracts Assistant
Mariel Maranan, Contracts Assistant
Gabriela Navar, MSRC Contracts Assistant
Ana Ponce, MSRC Administrative Liaison
Cynthia Ravenstein, MSRC Contracts Administrator
Veera Tyagi, Senior Deputy District Counsel
Paul Wright, Audio Visual Specialist

CALL TO ORDER

- Call to Order

  MSRC (Vice Chair) Larry McCallon called the meeting to order at 2:12 p.m. Roll call was taken at the start of the meeting. The following members and alternates were present: BENOIT, CARTER, RICHARDSON, ROYBAL-SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, and RUSH.

- Opening Comments

  There were no opening comments.

STATUS REPORT

- Clean Transportation Policy Update
  MSRC-TAC Chair Gretchen Hardison reported that on pages 1 and 2, there are a number of regulatory meetings that have been held that dealt with transportation electrification, in particular, transit fleets. On page 4 there is a report on zero emission vehicles in California. There is a link to the full report, if anyone is interested in learning more. There are a number of funding activities. She noted that the MSRC-TAC Members and Work Program Development Subcommittees will be considering these as we move forward, at MSRC's direction, in proposing program categories for the current funding cycle. The first is the Sustainability Planning Grants from SCAG, on page 4; and on page 5 the ZEV Readiness Funding from CEC is continuing; as well as funds for the development of Heavy Duty Low NOx engines. These were talked about at the Retreat. It does include a primary role for SCAQMD and additional funding from CEC to get those trucks commercialized as soon as possible. On page 8, there is a recently-released Fuel Cell Electric Truck Action Plan from the California Fuel Cell Partnership. On page 9, Measure M passed in Los Angeles County. Lastly, on page 12, the Obama Administration announces new actions to encourage the expansion of electric vehicles, including identifying 48 national electric vehicle charging corridors that should line up nicely with efforts on the state and local level.

MSRC Vice Chair Larry McCallon noted, for the record, that for Agenda Item #2 he doesn't have a financial interest in the item, but he is required to announce that he is a Board Member of the Southern California Regional Rail Authority, which is included in this item. Also, for Agenda Items 7 and 8, he is required to announce that although he has no financial interest, he is also an Alternate Board Member for Omnitrans, which is involved in this item.

MSRC Alternate Adam Rush indicated that he needed to abstain from Agenda Item #6 because his company has a contract, not related to this, but for the City of Yucaipa.

MSRC Member Michael Antonovich noted for the record that for Agenda Item #2, he does not have a financial interest, but he is required to identify that he is a member of the Board of Directors for the Southern California Regional Rail Authority, which is involved in this item.

MSRC Member Greg Winterbottom noted for the record that for Agenda Item #2, he does not have a financial interest, but he is required to identify that he is a Board Member of the Southern California Regional Rail Authority, which is involved in this item.

CONSENT CALENDAR (Items 1 through 6)
Receive and Approve Items
Agenda Item #1 – Minutes of the September 15 and October 20, 2016 MSRC Meetings

The minutes of the October 20, 2016 MSRC meeting were distributed at the meeting. The September 15, 2016 meeting minutes were not yet available.

> ON MOTION BY MSRC ALTERNATE REX RICHARDSON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS #1 THROUGH #6, THE MSRC UNANIMOUSLY VOTED TO APPROVE THE OCTOBER 20, 2016 MSRC MEETING MINUTES.
> AYES: ANTONOVICH, CARTER, RICHARDSON, ROYBAL-SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, RUSH.
> NOES: NONE.

ACTION: Staff will include the October 20, 2016 minutes in the MSRC Committee Report for the December 2, 2016 SCAQMD Board meeting, and place a copy on the MSRC's website.

Agenda Item #2 – Summary of Final Reports by MSRC Contractors

The MSRC received and unanimously approved a final report summary this month for Southern California Regional Rail Authority, Contract #MS16085, which provided $78,033 to implement Special Metrolink Service to Auto Club Speedway.

> ON MOTION BY MSRC ALTERNATE REX RICHARDSON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS #1 THROUGH #6, THE MSRC UNANIMOUSLY VOTED TO APPROVE THE FINAL REPORT LISTED ABOVE.
> AYES: ANTONOVICH, CARTER, RICHARDSON, ROYBAL-SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, RUSH.
> NOES: NONE.

ACTION: MSRC staff will file the final report and release any retention on the contract.

Receive and File Items
Agenda Item #3 – MSRC Contracts Administrator's Report

The MSRC AB 2766 Contracts Administrator's Report for September 29, 2016 through October 26, 2016 was included in the agenda package.

> ON MOTION BY MSRC ALTERNATE REX RICHARDSON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS #1 THROUGH #6, THE MSRC UNANIMOUSLY VOTED TO RECEIVE AND FILE THE CONTRACTS ADMINISTRATOR'S REPORT FOR SEPTEMBER 29, 2016 THROUGH OCTOBER 26, 2016.
> AYES: ANTONOVICH, CARTER, RICHARDSON, ROYBAL-SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, RUSH.
> NOES: NONE.

ACTION: Staff will include the MSRC Contracts Administrator's Report in the MSRC Committee Report for the December 2, 2016, SCAQMD Board meeting.

Agenda Item #4 – Financial Report on AB 2766 Discretionary Fund

A financial report on the AB 2766 Discretionary Fund for the period ending October 31, 2016 was included in the agenda package.

> ON MOTION BY MSRC ALTERNATE REX RICHARDSON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS #1 THROUGH #6, THE MSRC UNANIMOUSLY VOTED TO RECEIVE AND FILE THE FINANCIAL REPORT FOR THE PERIOD ENDING OCTOBER 31, 2016.
> AYES: ANTONOVICH, CARTER, RICHARDSON, ROYBAL-SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, RUSH.
> NOES: NONE.

ACTION: No further action is required.

Agenda Item #5 – Consider One-Year Term Extension by City of Anaheim, Contract #ML12041 ($68,977 – Install Electric Vehicle Charging Infrastructure)

The City requests a one-year term extension due to longer than expected negotiations with some of the targeted locations. The MSRC-TAC unanimously recommended approval.

> ON MOTION BY MSRC ALTERNATE REX RICHARDSON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS #1 THROUGH #6, THE MSRC UNANIMOUSLY VOTED TO APPROVE A ONE-YEAR TERM EXTENSION TO CITY OF ANAHEIM, CONTRACT #ML12041.
> AYES: ANTONOVICH, CARTER, RICHARDSON, ROYBAL-SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, RUSH.
> NOES: NONE.

ACTION: MSRC staff will amend the above contract accordingly.

Agenda Item #6– Consider Contract Replacement by City of Yucaipa, Contract #ML14050 (Installation of Bicycle Lanes)

The City requests a contract replacement to complete the remaining scope of work for the contract. The MSRC-TAC unanimously recommends approval.

> ON MOTION BY MSRC ALTERNATE REX RICHARDSON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS #1 THROUGH #6, THE MSRC VOTED TO APPROVE A CONTRACT REPLACEMENT FOR THE CITY OF YUCAIPA FOR THE INSTALLATION OF BICYCLE LANES.
> AYES: ANTONOVICH, CARTER, RICHARDSON, ROYBAL-SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON.
> NOES: NONE.
> ABSTAIN: RUSH.

ACTION: This replacement contract will be considered by the SCAQMD Board at its December 2, 2016 meeting.

ACTION CALENDAR (Items 7 through 8)
FYs 2014-16 WORK PROGRAM
Agenda Item #7 – Consider Application Received under the Alternative Fuel Infrastructure Program

Cynthia Ravenstein, MSRC Contracts Administrator, reported on this item on behalf of MSRC-TAC Member Nicole Soto. As an element of their FYs 2014-16 Work Program, the MSRC allocated $5 million to fund new and expanded CNG and LNG refueling stations, as well as modifications to vehicle maintenance facilities. The MSRC has previously awarded a total of $2,542,000. Consideration of one application from Omnitrans, for three locations, was delayed while clarification was sought. Omnitrans provided clarifying information on the project parameters. Based on this information, at their October 6, 2016 meeting, the MSRC-TAC recommended an award of $400,000 to Omnitrans for two of the three locations, and did not recommend an award for the East Valley location. At their October 20, 2016 meeting, the MSRC deferred action on the application and directed that additional information be sought. Omnitrans has further clarified the East Valley project and commits that the proposed project will result in increased throughput. The MSRC-TAC Infrastructure Subcommittee and the MSRC-TAC unanimously recommended approval of a $500,000 award to Omnitrans.

> ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC ALTERNATE REX RICHARDSON, THE MSRC UNANIMOUSLY VOTED TO APPROVE A $500,000 AWARD TO OMNITRANS, AS PART OF THE ALTERNATIVE FUEL INFRASTRUCTURE PROGRAM.
> AYES: ANTONOVICH, CARTER, RICHARDSON, ROYBAL-SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, RUSH.
> NOES: NONE.

ACTION: This award will be considered by the SCAQMD Board at its December 2, 2016 meeting.

Agenda Item #8 – Consider Application Received under the Near Zero Heavy-Duty Natural Gas Engine Incentive Program

Ray Gorski, MSRC Technical Advisor, reported on this item. He indicated that this is a continuation of the MSRC's Near-Zero Heavy Duty Natural Gas Engine Incentive Program. The MSRC has received an application from Omnitrans. They are requesting $945,000 for the purchase of 39 new transit vehicles and 24 repowered transit vehicles with the new ISL G near zero engine. The total number of engines which will be purchased under this project is 63. This application has gone through the Heavy Duty Subcommittee as well as the MSRC-TAC, and both recommend approval. Mr. Gorski added that he noted the air quality benefits associated with this program, both from the GHG perspective relative to Omnitrans' commitment to utilize renewable natural gas, as well as the criteria air pollutants which are going to be offset by having this low-emission engine used.

MSRC Member Greg Winterbottom asked if this Program has a geographic minimum. Riverside is always behind. He asked if they are catching up. Mr. Gorski indicated that Riverside this year has been a somewhat unique case in that they are fully aware of the Program and in general they

are very supportive. However, Riverside Transit Agency made some representations that they had issues with the earlier ISL G engine, and before they made a large financial commitment, they wanted to procure one, for which the MSRC is providing an incentive, just to ensure that it has the operability, maintainability, and reliability that they expect out of a transit bus engine. As we discussed at the MSRC-TAC, this engine has gone through its beta testing and has performed extremely well. This is going to be a very cost effective solution for not only criteria pollutants but GHG emission reductions also.

Mr. Winterbottom indicated that OCTA would like to get involved in the testing of the 11.9 liter engine. Mr. Gorski added that in addition to the 8.9 liter ISL G, Cummins Westport Innovations is going to be launching their 11.9 liter engine. The 11.9 engine will serve a lot of needs. Specifically, if you look at the power requirements for an articulated bus, the 11.9 will be a much better fit. OCTA has expressed their interest as participating in either a beta test program or some other early demonstration of the 11.9 engine in an articulated transit bus. MSRC staff side will work with the SCAQMD to find out if there will be the opportunity to have the engine made available for OCTA to use in a demonstration program. Mr. Winterbottom commented that after being able to share their graphic at the last meeting of the emissions of one bus in 1980 equaling the emissions of 240 buses today, he doesn't think there is any question of why we do not have smog days any more. He would appreciate if the MSRC could consider this as part of their Program.

> ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC ALTERNATE REX RICHARDSON, THE MSRC UNANIMOUSLY VOTED TO AWARD $945,000 TO OMNITRANS FOR THE PURCHASE OF 39 NEW TRANSIT VEHICLES AND THE REPOWER OF 24 TRANSIT VEHICLES WITH THE NEW ISL G NEAR ZERO ENGINE.
> AYES: ANTONOVICH, CARTER, RICHARDSON, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, RUSH.
> NOES: NONE.

ACTION: This award will be considered by the SCAQMD Board at its December 2, 2016 meeting.

OTHER BUSINESS

Agenda Item #9 – Other Business

MSRC Vice Chair Larry McCallon presented MSRC Member Michael Antonovich with a Certificate of Appreciation for his service from December 2002 to November 2016, as SCAQMD's representative on the MSRC, signed by MSRC Chair Greg Pettis on behalf of the MSRC. Vice Chair McCallon stated that Mr. Antonovich will be missed not only on the MSRC, but at the SCAQMD, Metrolink, and the Supervisor's position. He has been an icon in this area for a long time. Mr. Winterbottom shared that he had the distinct pleasure and opportunity of working with Mr. Antonovich when the Dodgers' Program was initiated. He recalls being at the Dodger Stadium that night and receiving the accolades that MSRC received for doing that wonderful program. It was the Mr. Antonovich's leadership that got us there. He thanked Mr. Antonovich for his service. Mr. Antonovich thanked the MSRC. He indicated that it was a pleasure working with all of them. He worked with some Members on various committees throughout the County and appreciates their friendship and involvement.

PUBLIC COMMENT PERIOD

Public comments were allowed during the discussion of each agenda item. No comments were made on non-agenda items.

ADJOURNMENT

THERE BEING NO FURTHER BUSINESS, THE MSRC MEETING ADJOURNED AT 2:35 P.M.

NEXT MEETING

Thursday, December 15, at 2 p.m., at South Coast Air Quality Management District, 21865 Copley Drive, Conference Room CC8, Diamond Bar, CA 91765.

[Prepared by Ana Ponce]

MOBILE SOURCE AIR POLLUTION REDUCTION REVIEW COMMITTEE
THURSDAY, DECEMBER 15, 2016 MEETING MINUTES
21865 Copley Drive, Diamond, Bar, CA 91765- Conference Room CC-8

MEMBERS PRESENT:

(Chair) Greg Pettis, representing RCTC
(Vice Chair) Larry McCallon, representing SANBAG
Michael Carter (Alt.) representing California Air Resources Board
Dolores Roybal Saltarelli, representing Regional Rideshare Agency (via v/c)
Greg Winterbottom, representing OCTA
Mark Yamarone (Alt.), representing Los Angeles County MTA (via v/c)

MEMBERS ABSENT:

Ben Benoit (Alt.), representing SCAQMD
Jack Kitowski, representing California Air Resources Board
Michele Martinez, representing SCAG
Steve Veres, representing LA County MTA

MSRC-TAC MEMBERS PRESENT:

Rongsheng Luo (Alt.), representing Southern California Association of Governments
Kelly Lynn, representing San Bernardino Associated Governments

OTHERS PRESENT:

David Czamanske, SCAQMD Board Assistant (Cacciotti)
Lauren Dunlap, SoCalGas
Ric Teano, OCTA

SCAQMD STAFF & CONTRACTORS

Angelica Enriquez, SCAQMD Staff
Ray Gorski, MSRC Technical Advisor-Contractor
Henry Hogo, Asst. DEO/Science and Technology Advancement
John Kampa, Financial Analyst
Quintus Lee, Assistant Telecommunications Technician
Matt MacKenzie, MSRC Contracts Assistant
Ana Ponce, MSRC Administrative Liaison
Cynthia Ravenstein, MSRC Contracts Administrator
Veera Tyagi, Senior Deputy District Counsel
Paul Wright, Audio Visual Specialist

CALL TO ORDER

- Call to Order

  MSRC Chair Greg Pettis called the meeting to order at 2:01 p.m.

- Opening Comments

  There were no opening comments.

MSRC Member Greg Winterbottom noted for the record that for Agenda Items #6 and #7, he does not have a financial interest, but he is required to identify that he is a Board Member of the Orange County Transportation Authority (OCTA), which is involved in those items.

CONSENT CALENDAR (Items 1 through 6)
Receive and Approve Items

Agenda Item #1 – Minutes of the September 15, 2016 MSRC Meeting

The minutes of the September 15, 2016 MSRC meeting were not yet ready and, therefore, were pulled from the agenda.

Agenda Item #2 – Summary of Final Reports by MSRC Contractors

The MSRC received and unanimously approved two final report summaries this month, as follows:

1. Ontario CNG Station, Inc., Contract #MS14046, which provided $150,000 for the expansion of existing CNG infrastructure; and
2. US Air Conditioning Distributors, Contract #MS14084, which provided $100,000 for the expansion of existing CNG infrastructure.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO APPROVE THE FINAL REPORTS LISTED ABOVE.
AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
NOES: NONE.

ACTION: MSRC staff will file the final reports and release any retention on the contracts.

Agenda Item #3 – Consider Adoption of 2017 Meeting Schedules

Annually the MSRC considers a proposed meeting schedule for the upcoming year. The schedule continues with meetings on the first and third Thursdays, respectively, for the MSRC-TAC and MSRC, with two exceptions. The MSRC-TAC recommends meetings in January and December be held on the second Thursday of the month to avoid holiday conflicts.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO ADOPT THE 2017 MSRC AND MSRC-TAC MEETING SCHEDULES.
AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
NOES: NONE.

Receive and File Items
Agenda Item #4 – MSRC Contracts Administrator's Report

The MSRC AB 2766 Contracts Administrator's Report for October 27, 2016 through November 30, 2016 was included in the agenda package.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO RECEIVE AND FILE THE CONTRACTS ADMINISTRATOR'S REPORT FOR OCTOBER 27, 2016 THROUGH NOVEMBER 30, 2016.
AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
NOES: NONE.

ACTION: Staff will include the MSRC Contracts Administrator's Report in the MSRC Committee Report for the January 6, 2017 SCAQMD Board meeting.

Agenda Item #5 – Financial Report on AB 2766 Discretionary Fund

A financial report on the AB 2766 Discretionary Fund for the period ending November 30, 2016 was included in the agenda package.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO RECEIVE AND FILE THE FINANCIAL REPORT FOR THE PERIOD ENDING NOVEMBER 30, 2016.
AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
NOES: NONE.

ACTION: No further action is required.

For Approval – As Recommended
Agenda Item #6 – Consider Modified Scope and Schedule by Orange County Transportation Authority (OCTA), Contract #MS16093 ($1,553,657 – Mobile Ticketing System)

The MSRC awarded funding to OCTA to purchase hardware for their mobile ticketing system. OCTA requests to modify the scope to utilize a portion of the MSRC's award towards mobile software development necessary to implement the system. OCTA also requests to delay some of the initial project milestones, with no change to the project and date or contract term. The MSRC-TAC recommended approval.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, UNDER APPROVAL OF CONSENT CALENDAR ITEMS 2 THROUGH 6, THE MSRC UNANIMOUSLY VOTED TO APPROVE OCTA TO MODIFY THE SCOPE TO UTILIZE A PORTION OF THE MSRC'S AWARD TOWARDS MOBILE SOFTWARE DEVELOPMENT NECESSARY TO IMPLEMENT THE MOBILE TICKETING SYSTEM; AND TO DELAY SOME OF THE INITIAL PROJECT MILESTONES, WITH NO CHANGE TO THE PROJECT AND DATE OR CONTRACT TERM.
AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
NOES: NONE.

ACTION: This award will be considered by the SCAQMD Board at its January 6, 2017 meeting.

ACTION CALENDAR (Items 7 through 10)
FYs 2014-16 WORK PROGRAM
Agenda Item #7 – Consider Engine Donation in Lieu of Scrapping by OCTA, Contract #MS16112 (proposed) ($1,470,000 – Repower 98 Transit Buses)

Cynthia Ravenstein, MSRC Contracts Administrator, reported on this item. OCTA was awarded $1,470,000 by the MSRC to repower 98 of their buses with the new near-zero certified Cummins natural gas engines. MSRC policy requires that the replaced engines be scrapped if the engines that are being replaced were the basis for calculating emission benefits from the project. Rather than scrapping all 98 engines, OCTA requests to donate four of the removed engines to local community colleges for use in their automotive training programs. The engines would be used primarily for tear down and reassembly, with limited starts to ensure they were put back together correctly. The MSRC-TAC reviewed the request and recommended approval, with one abstention.

ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, THE MSRC UNANIMOUSLY VOTED TO APPROVE OCTA'S DONATION OF 4 OF THEIR REMOVED ENGINES TO LOCAL COMMUNITY COLLEGES FOR USE IN THEIR AUTOMOTIVE TRAINING PROGRAMS.
AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
NOES: NONE.

ACTION: This donation will be considered by the SCAQMD Board at its January 6, 2017 meeting.

Agenda Item #8 – Consider Potential Reallocation of Costs Between Tasks and/or Contract Value Increase by the Better World Group, Contract #MS16030 ($120,000 – Programmatic Outreach Services)

Cynthia Ravenstein, MSRC Contracts Administrator, reported on this item. The MSRC has authorized the development and implementation of a new website. While the Better World Group (BWG), the MSRC's Programmatic Outreach Coordinator, is already responsible for routine content review, additional BWG effort is needed for more extensive content review as well as providing input on the new design and functionality. BWG has requested a contract value increase of $10,716: $9,990 to support the development and implementation of the new MSRC website, and $726 to cover reimbursement of travel expenses for the MSRC retreat's keynote speaker. Additionally, BWG has indicated that the current allocations in their contract are not sufficient to address more extensive than usual work involved in planning and orchestrating the September 2016 Joint MSRC/MSRC-TAC Retreat. There is enough money under the task in their contract for Planning, Facilitation, and Participating in Events and Meetings, that could cover the costs, but it would leave a very low balance for the rest of the contract term which goes to the end of December 2017, especially considering the MSRC's expressed desire to have even more outreach to stakeholders. The MSRC-TAC's Administrative Subcommittee considered some different options. It would be feasible to reallocate funding from some of the other tasks in the contract that haven't been so demanding. For example, Development and Dissemination of Marketing and Promotional Materials, $2,000 could be reallocated from that. There is also a Reserve for Future Tasks of $14,620, and $3,891 is recommended to be reallocated from that to the Events and Meetings task. The remaining costs could be covered from what was already in the contract for that.

In summary, the total contract value increase that is recommended is $10,716: that would be covering the costs for supporting the new website development and reimbursing the keynote speaker; and the other $5,891 would just be reallocations of funds that are already in the contract. If the MSRC chooses to approve this increase, that would be considered part of the MSRC's FYs 2016-18 Work Program.

> ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, THE MSRC UNANIMOUSLY VOTED TO APPROVE, FOR THE BETTER WORLD GROUP CONTRACT #MS16030, A $10,716 CONTRACT VALUE INCREASE TO SUPPORT NEW WEBSITE DEVELOPMENT AND REIMBURSEMENT OF KEYNOTE SPEAKER TRAVEL EXPENSES, AND REALLOCATION OF A TOTAL OF $5,891 BETWEEN TASKS.
> AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
> NOES: NONE.

ACTION: This item will be considered by the SCAQMD Board at its January 6, 2017 meeting.

Agenda Item #9 – Consider $1,800 Contract Value Increase and Six-Month Term Extension for Mineral Studios, Contract #MS16004 ($25,890 – Design, Develop, Host and Maintain MSRC Website)

In the next item on the agenda, Agenda Item #10, the MSRC will consider a recommendation to award a contract for developing and maintaining a new MSRC website. It is anticipated that the new website will launch approximately five months from the date of contract execution. However, Contract #MS16004, which covers maintenance of the existing website, will expire on July 3, 2017. Mineral Studios has provided a quote of $1,800 to continue maintaining the MSRC website for an additional six months. The MSRC-TAC reviewed the request and unanimously recommended approval.

> ON MOTION BY MSRC VICE CHAIR LARRY MCCALLON, AND SECONDED BY MSRC MEMBER GREG WINTERBOTTOM, THE MSRC UNANIMOUSLY VOTED TO APPROVE A SIX-MONTH TERM EXTENSION AND $1,800 VALUE INCREASE OF CONTRACT #MS16004 FOR MINERAL STUDIOS.
> AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
> NOES: NONE.

Agenda Item #10 – Consider Selection of New MSRC Website Developer

Cynthia Ravenstein, MSRC Contracts Administrator, reported on this item on behalf of MSRC-TAC Chair Gretchen Hardison. In August of 2016, the MSRC authorized the release of RFP #P2017-05, seeking a contractor for the development, hosting and maintenance of a new website. The solicitation period commenced on October 7, 2016 and closed on November 10, 2016. A total of 11 proposals were received. The MSRC-TAC Website Evaluation Subcommittee has completed reviewing, scoring and ranking of each proposal, and conducted oral interviews on December 7, 2016. They recommended the selection of the firm Geographics. This is a local firm. They have done work with some MSRC Member agencies. The feeling was that they have a very good understanding of the MSRC's mission and the specific projects. Their team would bring a lot of public agency experience, they have high staff qualifications, and they have had numerous awards for sites they have developed. They provided a detailed work plan. It is also the best cost value. It is the second lowest cost overall. Included in that is the latitude for design changes, as the development is going forward. It would also include the hosting and basic maintenance for a two-year period and 10 hours of telephone support for any issues. When the MSRC-TAC considered this, there was also a feeling that there could be other things that might come up, additional support that might be needed beyond 10 hours, so the MSRC-TAC is recommending an award with a 10 percent contingency, so the total award not to exceed $56,953. Of that, $5,178 would be an on-call reserve to be utilized only with prior written approval from Ms. Ravenstein.

MSRC Chair Greg Pettis asked Ms. Ravenstein what she meant by "local." Ms. Ravenstein replied that Geographics is located in Riverside, California.

ON MOTION BY MSRC MEMBER GREG WINTERBOTTOM, AND SECONDED BY MSRC VICE CHAIR LARRY MCCALLON, THE MSRC UNANIMOUSLY VOTED TO APPROVE AN AWARD TO GEOGRAPHICS IN AN AMOUNT NOT TO EXCEED $56,953, OF WHICH $5,178 WILL BE A CONTINGENCY/ON CALL-RESERVE TO BE UTILIZED ONLY WITH PRIOR WRITTEN APPROVAL FROM THE MSRC CONTRACTS ADMINISTRATOR.

AYES: CARTER, ROYBAL SALTARELLI, YAMARONE, WINTERBOTTOM, MCCALLON, PETTIS.
NOES: NONE.

OTHER BUSINESS

Agenda Item #11 – Other Business

- Ray Gorski MSRC Technical Advisor, indicated that the MSRC Work Program Development process is well on its way. The three categories which the MSRC determined to be their first priority include the Local Government Match Program, Infrastructure, and the Event Center Program. All the Subcommittees have met. They all have the goal to be as expeditious as possible in getting draft solicitations to the MSRC. The current objectives have been laid out. The timeline is for the Event Center Program, at a minimum, to have the application ready for MSRC review no later than February, and it will go to the SCAQMD Governing Board for approval in March, if the current timeline can be maintained. The Local Government Match Program will probably require an additional month. We anticipate that that will be brought for MSRC review in the March timeframe. For the Infrastructure Program, we are working very closely with the California Energy Commission (CEC). The CEC has expressed a high degree of interest in trying to leverage, to the extent feasible, the available funding that each agency has to implement programs here in the South Coast, which are of mutual benefit to both agencies. Most likely that will be brought to MSRC consideration in the March/April timeframe, at the latest. Once those three Programs are off the MSRC's plate, we will still be looking to invest the remaining balance of the funding, which could be on the order of $25 million. There is still going to be a fair amount of work to be done after those three programs. These programs are very popular. Calls are received almost daily from entities wanting to know when they are going to be available. Everyone is working as quickly as practical to get the MSRC programs for consideration after the first of the year, probably in February, as a reasonable timeline.

PUBLIC COMMENT PERIOD

- Public comments were allowed during the discussion of each agenda item. No comments were made on non-agenda items.

ADJOURNMENT

THERE BEING NO FURTHER BUSINESS, THE MSRC MEETING ADJOURNED AT 2:17 P.M.

NEXT MEETING

Thursday, January 19, 2017, at 2 p.m., Room CC-8.

[Prepared by Ana Ponce]

Clean Transportation
Funding from the MSRC
Mobile Source Air Pollution Reduction Review Committee

MSRC Agenda Item No. 3

DATE: February 16, 2017

FROM: Cynthia Ravenstein

SUBJECT: AB 2766 Contracts Administrator's Report

SYNOPSIS: This report covers key issues addressed by MSRC staff, status of open contracts, and administrative scope changes from December 1, 2016 to January 25, 2017.

RECOMMENDATION: Receive and file report

WORK PROGRAM IMPACT: None

Contract Execution Status

2016-18 Work Program

On July 8, 2016, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is under development.

On October 7, 2016, the SCAQMD Governing Board approved three awards under the Event Center Transportation Program and one award for a Regional Active Transportation Partnership Program. These contracts are under development, undergoing internal review or with the prospective contractor for signature.

On January 6, 2017, the SCAQMD Governing Board approved an award for development, hosting and maintenance of a new MSRC website. This contract is undergoing internal review.

2014-16 Work Program

On December 5, 2014, the SCAQMD Governing Board approved an award under the AB118 Enhanced Fleet Maintenance Program. This contract is executed.

On June 5, 2015, the SCAQMD Governing Board approved two awards under the Event Center Transportation Program and one award to provide low-emission transportation services to the Special Olympics World Games. These contracts are executed.

On September 4, 2015, the SCAQMD Governing Board approved 25 awards under the Local Government Match Program and one award under the Transportation Control Measure

Partnership Program. These contracts are undergoing requested modifications, with the prospective contractor for signature, or executed.

On October 2, 2015, the SCAQMD Governing Board approved 11 awards under the Local Government Match Program and one award under the Alternative Fuel Infrastructure Program. These contracts are with the prospective contractor for signature, with the SCAQMD Board Chair for signature, or executed.

On November 6, 2015, the SCAQMD Governing Board approved 37 awards under the Local Government Match Program. These contracts are under development, with the prospective contractor for signature, with the SCAQMD Board Chair for signature, or executed.

On December 4, 2015, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program, one award under the Alternative Fuel Infrastructure Program, and one award under the Transportation Control Measure Partnership Program. These contracts are under development or executed.

On January 8, 2016, the SCAQMD Governing Board approved two awards under the Major Event Center Transportation Program, one award under the Local Government Match Program, and one award under the Transportation Control Measure Partnership Program. These contracts are executed.

On March 4, 2016, the SCAQMD Governing Board approved two awards under the Alternative Fuel Infrastructure Program. These contracts are with the prospective contractor for signature or executed.

On April 1, 2016, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program and five awards under the Transportation Control Measure Partnership Program. These contracts are with the prospective contractor for signature, with the SCAQMD Board Chair for signature, or executed.

On May 6, 2016, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program and one award under the Transportation Control Measure Partnership Program. These contracts are executed.

On June 3, 2016, the SCAQMD Governing Board approved one award under the Alternative Fuel Infrastructure Program. This contract is executed.

On October 7, 2016, the SCAQMD Governing Board approved ten awards under the Alternative Fuel Infrastructure Program and five awards under the Near-Zero Natural Gas Engine Incentives Program. These contracts are under development, undergoing internal review, or with the prospective contractor for signature.

On January 6, 2017, the SCAQMD Governing Board approved an award under the Alternative Fuel Infrastructure Program and an award under the Near-Zero Natural Gas Engine Incentives Program. These contracts are under development or undergoing internal review.

2012-14 Work Program

Except as specifically discussed below, all contracts from this Work Program are executed.

Work Program Status

Contract Status Reports for work program years with open (including "Open/Complete") and/or pending contracts are attached. MSRC or MSRC-TAC members may request spreadsheets covering any other work program year.

FY 2004-05 Work Program Contracts

One contract from this work program year is open.

FY 2004-05 Invoices Paid

No invoices were paid during this period.

FY 2005-06 Work Program Contracts

All contracts from this work program year are now closed. Two contracts closed during this period: City of Hemet, Public Works, Contract #ML06035 – Purchase Seven Natural Gas Trucks and Install New Natural Gas Infrastructure; City of Santa Monica, Contract #ML06071 – Purchase Three Natural Gas Trucks and Install CNG Fueling Station.

FY 2005-06 Work Program Invoices Paid

No invoices were paid during this period.

FY 2006-07 Work Program Contracts

No contracts from this work program year are open; and 3 are in "Open/Complete" status. One contract closed during this period: City of Redondo Beach, Contract #ML07043 – Purchase Five Natural Gas Transit Vehicles.

FY 2006-07 Invoices Paid

No invoices were paid during this period.

FY 2007-08 Work Program Contracts

5 contracts from this work program year are open; and 6 are in "Open/Complete" status. Three contracts closed during this period: City of Laguna Beach Public Works, Contract #ML08050 – Purchase Three LPG Trolleys; Omnitrans, Contract #MS08017 – Purchase Thirty CNG Buses; and Go Natural Gas, Contract #MS08063 – Install New CNG Station in Moreno Valley.

FY 2007-08 Invoices Paid

No invoices were paid during this period.

FY 2008-09 Work Program Contracts

2 contracts from this work program year are open; and 11 are in "Open/Complete" status.

FY 2008-09 Invoices Paid

No invoices were paid during this period.

FY 2010-11 Work Program Contracts

14 contracts from this work program year are open; and 32 are in "Open/Complete" status.

FY 2010-11 Invoices Paid
No invoices were paid during this period.

FY 2011-12 Work Program Contracts
27 contracts from this work program year are open, and 25 are in "Open/Complete" status. One contract moved into "Open/Complete" status during this period: City of Los Angeles, Bureau of Sanitation, Contract #ML12017 – Purchase 32 Heavy-Duty Natural Gas Vehicles.

FY 2011-12 Invoices Paid
One invoice in the amount of $30,000 was paid during this period.

FYs 2012-14 Work Program Contracts
51 contracts from this work program year are open, and 12 are in "Open/Complete" status. Two contracts moved into "Open/Complete" status during this period: Ontario CNG Station Inc., Contract #MS14046 – Expand Existing CNG Infrastructure; and US Air Conditioning Distributors, Contract #MS14084 – Expand Existing CNG Infrastructure. Following receipt of necessary information, a proposed contract with the City of Beaumont was sent to them for signature on May 27, 2016. MSRC staff are following up with the County of Los Angeles concerning their proposed contract for electric vehicle charging infrastructure.

FYs 2012-14 Invoices Paid
5 invoices totaling $783,307.79 were paid during this period.

FYs 2014-16 Work Program Contracts
69 contracts from this work program year are open, and 2 are in "Open/Complete" status.

FYs 2014-16 Invoices Paid
7 invoices totaling $284,471.09 were paid during this period.

Administrative Scope Changes
No administrative scope changes were initiated during the period of December 1, 2016 to January 25, 2017.

Attachments
- FY 2004-05 through FYs 2014-16 (except FY 2009-10) Contract Status Reports

MSRC Database
Mobile Source Air Pollution Reduction Review Committee

AB2766 Discretionary Fund Program Invoices

December 1, 2016 to January 25, 2017

Contract Admin.	MSRC Chair	MSRC Liaison	Finance	Contract #	Contractor	Invoice #	Amount
2011-2012 Work Program							
1/13/2017	2/1/2017	2/1/2017	2/2/2017	ML12015	City of Fullerton	R140784-Fin	$30,000.00
Total: $30,000.00							
2012-2014 Work Program							
1/24/2017	2/1/2017	2/1/2017	2/2/2017	ML14018	City of Los Angeles, Department of General Serv	FINAL	$720,000.00
1/10/2017	1/12/2017	1/13/2017	1/17/2017	MS14089	Top Shelf Consulting, LLC	013	$10,000.00
1/12/2017	1/12/2017	1/13/2017	1/17/2017	MS14090	City of Monterey Park	2	$28,307.79
12/15/2016	12/15/2016	12/15/2016	12/16/2016	MS14046	Ontario CNG Station Inc.	Final	$15,000.00
12/15/2016	12/15/2016	12/15/2016	12/16/2016	MS14084	US Air Conditioning Distributors	VG00005-Fin	$10,000.00
Total: $783,307.79							
2014-2016 Work Program							
1/20/2017	2/1/2017	2/1/2017	2/2/2017	ML16017	City of Long Beach	17-001 ADM	$59,642.73
1/12/2017	1/12/2017	1/13/2017	1/17/2017	ML16061	City of Murrieta	R044113-Fin	$9,398.36
1/4/2017	1/5/2017	1/5/2017	1/17/2017	MS16004	Mineral LLC	101811	$300.00
12/2/2016	12/15/2016	12/15/2016	12/16/2016	MS16084	Transit Systems Unlimited, Inc.	57485	$51,510.00
12/2/2016	12/15/2016	12/15/2016	12/16/2016	MS16084	Transit Systems Unlimited, Inc.	57181	$78,780.00
12/2/2016	12/15/2016	12/15/2016	12/16/2016	MS16084	Transit Systems Unlimited, Inc.	56899	$75,750.00
12/2/2016	12/15/2016	12/15/2016	12/16/2016	MS16084	Transit Systems Unlimited, Inc.	56721	$9,090.00
Total: $284,471.09							

Total This Period: $1,097,778.88

MSRC Database
Mobile Source Air Pollution Reduction Review Committee

FYs 2004-05 Through 2014-16 AB2766 Contract Status Report

2/9/2017

FY 2004-2005 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
ML05014	Los Angeles County Department of P	5/21/2007	11/20/2008	3/20/2018	$204,221.00	$0.00	Traffic Signal Synchronization	$204,221.00	No
Total: 1									
Declined/Cancelled Contracts									
ML05005	City of Highland				$20,000.00	$0.00	2 Medium Duty CNG Vehicles	$20,000.00	No
ML05008	Los Angeles County Department of P				$140,000.00	$0.00	7 Heavy Duty LPG Street Sweepers	$140,000.00	No
ML05010	Los Angeles County Department of P				$20,000.00	$0.00	1 Heavy Duty CNG Bus	$20,000.00	No
MS05030	City of Inglewood				$31,662.00	$0.00	2 CNG Street Sweepers	$31,662.00	No
MS05032	H&C Disposal				$34,068.00	$0.00	2 CNG Waste Haulers	$34,068.00	No
MS05044	City of Colton				$78,720.00	$0.00	CNG Station Upgrade	$78,720.00	No
Total: 6									
Closed Contracts									
ML05006	City of Colton Public Works	7/27/2005	7/26/2006		$30,000.00	$30,000.00	3 Medium Duty CNG Vehicles	$0.00	Yes
ML05011	Los Angeles County Department of P	8/10/2006	12/9/2007	6/9/2008	$52,409.00	$51,048.46	3 Heavy Duty LPG Shuttle Vans	$1,360.54	Yes
ML05013	Los Angeles County Department of P	1/5/2007	7/4/2008	1/4/2013	$313,000.00	$313,000.00	Traffic Signal Synchronization	$0.00	Yes
ML05015	City of Lawndale	7/27/2005	7/26/2006		$10,000.00	$10,000.00	1 Medium Duty CNG Vehicle	$0.00	Yes
ML05016	City of Santa Monica	9/23/2005	9/22/2006	9/22/2007	$350,000.00	$350,000.00	6 MD CNG Vehicles, 1 LPG Sweep, 13 CNG	$0.00	Yes
ML05017	City of Signal Hill	1/16/2006	7/15/2007		$126,000.00	$126,000.00	Traffic Signal Synchronization	$0.00	Yes
ML05018	City of San Bernardino	4/19/2005	4/18/2006		$40,000.00	$40,000.00	4 M.D. CNG Vehicles	$0.00	Yes
ML05019	City of Lakewood	5/6/2005	5/5/2006		$10,000.00	$10,000.00	1 M.D. CNG Vehicle	$0.00	Yes
ML05020	City of Pomona	6/24/2005	6/23/2006		$10,000.00	$10,000.00	1 M.D. CNG Vehicle	$0.00	Yes
ML05021	City of Whittier	7/7/2005	7/6/2006	4/6/2008	$100,000.00	$80,000.00	Sweeper, Aerial Truck, & 3 Refuse Trucks	$20,000.00	Yes
ML05022	City of Claremont	9/23/2005	9/22/2006		$20,000.00	$20,000.00	2 M.D. CNG Vehicles	$0.00	Yes
ML05024	City of Cerritos	4/18/2005	3/17/2006		$10,000.00	$10,000.00	1 M.D. CNG Vehicle	$0.00	Yes
ML05025	City of Malibu	5/6/2005	3/5/2006		$10,000.00	$10,000.00	1 Medium-Duty CNG Vehicle	$0.00	Yes
ML05026	City of Inglewood	1/6/2006	1/5/2007	2/5/2009	$60,000.00	$60,000.00	2 CNG Transit Buses, 1 CNG Pothole Patch	$0.00	Yes
ML05027	City of Beaumont	2/23/2006	4/22/2007	6/22/2010	$20,000.00	$20,000.00	1 H.D. CNG Bus	$0.00	Yes
ML05028	City of Anaheim	9/8/2006	9/7/2007	5/7/2008	$85,331.00	$85,331.00	Traffic signal coordination & synchronization	$0.00	Yes
ML05029	Los Angeles World Airports	5/5/2006	9/4/2007		$140,000.00	$140,000.00	Seven CNG Buses	$0.00	Yes
ML05071	City of La Canada Flintridge	1/30/2009	1/29/2011		$20,000.00	$20,000.00	1 CNG Bus	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML05072	Los Angeles County Department of P	8/24/2009	5/23/2010	1/23/2011	$349,000.00	$349,000.00	Traffic Signal Synchronization (LADOT)	$0.00	Yes
MS05001	A-Z Bus Sales, Inc.	2/4/2005	12/31/2005	12/31/2006	$1,385,000.00	$1,385,000.00	CNG School Bus Buydown	$0.00	Yes
MS05002	California Bus Sales	2/4/2005	12/31/2005	12/31/2006	$1,800,000.00	$1,800,000.00	CNG School Bus Buydown	$0.00	Yes
MS05003	BusWest	1/28/2005	12/31/2005	12/31/2006	$2,100,000.00	$1,620,000.00	CNG School Bus Buydown	$480,000.00	Yes
MS05004	Johnson/Ukropina Creative Marketin	11/27/2004	1/18/2006	4/18/2006	$1,000,000.00	$994,612.56	Implement "Rideshare Thursday" Campaign	$5,387.44	Yes
MS05031	City of Ontario, Housing & Municipal	7/22/2005	3/21/2007		$191,268.00	$191,268.00	11 CNG Waste Haulers	$0.00	Yes
MS05033	Waste Management of the Desert	9/26/2005	5/25/2007		$202,900.00	$202,900.00	10 CNG Waste Haulers	$0.00	Yes
MS05034	Sukut Equipment, Inc.	9/9/2005	5/8/2007		$1,151,136.00	$1,151,136.00	Repower 12 Scrapers	$0.00	Yes
MS05035	Varner Construction Inc.	11/28/2005	4/27/2007	2/27/2008	$334,624.00	$334,624.00	Repower 5 Off-Road H.D. Vehicles	$0.00	Yes
MS05036	Camarillo Engineering	8/18/2005	1/17/2007		$1,167,276.00	$1,167,276.00	Repower 12 Scrapers	$0.00	Yes
MS05037	Road Builders, Inc.	11/21/2005	4/20/2007	6/20/2008	$229,302.00	$229,302.00	Repower 2 Scrapers	$0.00	Yes
MS05038	SunLine Transit Agency	3/30/2006	9/29/2007		$135,000.00	$135,000.00	15 CNG Buses	$0.00	Yes
MS05039	Los Angeles County MTA	4/28/2006	4/27/2008		$405,000.00	$405,000.00	75 CNG Buses	$0.00	Yes
MS05040	Orange County Transportation Autho	3/23/2006	12/22/2007	6/22/2008	$200,000.00	$200,000.00	25 CNG Buses	$0.00	Yes
MS05041	The Regents of the University of Cali	9/5/2006	8/4/2007	9/4/2008	$15,921.00	$15,921.00	CNG Station Upgrade	$0.00	Yes
MS05042	City of Ontario, Housing & Municipal	11/21/2005	9/20/2006	7/20/2007	$117,832.00	$74,531.27	CNG Station Upgrade	$43,300.73	Yes
MS05043	Whittier Union High School District	9/23/2005	7/22/2006		$15,921.00	$15,921.00	CNG Station Upgrade	$0.00	Yes
MS05045	City of Covina	9/9/2005	7/8/2006		$10,000.00	$7,435.61	CNG Station Upgrade	$2,564.39	Yes
MS05046	City of Inglewood	1/6/2006	5/5/2007		$139,150.00	$56,150.27	CNG Station Upgrade	$82,999.73	Yes
MS05047	Orange County Transportation Autho	10/20/2005	10/19/2006	1/19/2007	$75,563.00	$75,563.00	CNG Station Upgrade	$0.00	Yes
MS05048	City of Santa Monica	7/24/2006	11/23/2007		$150,000.00	$150,000.00	CNG Station Upgrade	$0.00	Yes
MS05049	Omnitrans	9/23/2005	2/22/2007		$25,000.00	$7,250.00	CNG Station Upgrade	$17,750.00	Yes
MS05050	Gateway Cities Council of Governme	12/21/2005	4/20/2010		$1,464,839.00	$1,464,838.12	Truck Fleet Modernization Program	$0.88	Yes
MS05051	Jagur Tractor	1/16/2006	4/15/2007	10/15/2007	$660,928.00	$660,928.00	Repower 6 Scrapers	$0.00	Yes
MS05052	Caufield Equipment, Inc.	8/3/2005	1/2/2007		$478,000.00	$478,000.00	Repower 4 Scrapers	$0.00	Yes
MS05070	Haaland Internet Productions (HIP D	6/24/2005	5/31/2007	11/30/2011	$100,715.00	$92,458.24	Design, Host & Maintain MSRC Website	$8,256.76	Yes
Total: 44									
Closed/Incomplete Contracts									
ML05007	Los Angeles County Dept of Beache	6/23/2006	6/22/2007	12/22/2007	$50,000.00	$0.00	5 Medium Duty CNG Vehicles	$50,000.00	No
ML05009	Los Angeles County Department of P	6/22/2006	12/21/2007	9/30/2011	$56,666.00	$0.00	2 Propane Refueling Stations	$56,666.00	No
ML05012	Los Angeles County Department of P	11/10/2006	5/9/2008	1/9/2009	$349,000.00	$0.00	Traffic Signal Synchronization (LADOT)	$349,000.00	No
ML05023	City of La Canada Flintridge	3/30/2005	2/28/2006	8/28/2008	$20,000.00	$0.00	1 CNG Bus	$20,000.00	No
Total: 4									

FY 2005-2006 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Declined/Cancelled Contracts									
ML06018	Los Angeles County Dept of Beache				$375,000.00	$0.00	New CNG Station & 2 CNG Dump Trucks	$375,000.00	No
ML06019	Los Angeles County Dept of Beache				$250,000.00	$0.00	New CNG Station & 2 CNG Dump Trucks	$250,000.00	No
ML06023	City of Baldwin Park	6/16/2006	9/15/2012		$20,000.00	$0.00	CNG Dump Truck	$20,000.00	No
ML06024	City of Pomona	8/3/2007	7/2/2013	7/2/2014	$286,450.00	$0.00	New CNG Station	$286,450.00	No
ML06030	City of Burbank	3/19/2007	9/18/2011		$287,700.00	$0.00	New CNG Fueling Station	$287,700.00	No
ML06037	City of Lynwood				$25,000.00	$0.00	1 Nat Gas Dump Truck	$25,000.00	No
ML06039	City of Inglewood	2/9/2007	2/8/2008	4/8/2011	$50,000.00	$0.00	Modify Maintenance Facility for CNG Vehicle	$50,000.00	No
ML06055	City of Los Angeles, Dept. of Genera				$125,000.00	$0.00	5 Gas-Electric Hybrid Buses	$125,000.00	No
ML06059	City of Fountain Valley				$25,000.00	$0.00	One H.D. CNG Truck	$25,000.00	No
Total: 9									
Closed Contracts									
ML06016	City of Whittier	5/25/2006	5/24/2012	11/24/2012	$50,000.00	$50,000.00	2 CNG Refuse Trucks	$0.00	Yes
ML06017	City of Claremont	8/2/2006	4/1/2012		$50,000.00	$50,000.00	2 CNG Refuse Trucks	$0.00	Yes
ML06020	Los Angeles Department of Water an	3/19/2007	9/18/2013	4/18/2014	$25,000.00	$25,000.00	CNG Aerial Truck	$0.00	Yes
ML06021	Los Angeles World Airports	9/13/2006	5/12/2013		$150,000.00	$150,000.00	6 CNG Buses	$0.00	Yes
ML06022	City of Los Angeles, Bureau of Sanit	5/4/2007	1/3/2014		$1,250,000.00	$1,250,000.00	50 LNG Refuse Trucks	$0.00	Yes
ML06025	City of Santa Monica	1/5/2007	11/4/2012	12/14/2014	$300,000.00	$300,000.00	12 H.D. CNG Vehicles	$0.00	Yes
ML06026	City of Cerritos	10/27/2006	9/26/2010		$60,500.00	$60,500.00	CNG Station Upgrade	$0.00	Yes
ML06027	City of Redondo Beach	9/5/2006	5/4/2012	10/4/2012	$50,000.00	$50,000.00	2 Heavy-Duty CNG Trucks	$0.00	Yes
ML06028	City of Pasadena	9/29/2006	11/28/2012	3/28/2014	$245,000.00	$245,000.00	New CNG Station & Maint. Fac. Upgrades	$0.00	Yes
ML06029	City of Culver City Transportation De	9/29/2006	8/28/2012	12/28/2012	$50,000.00	$50,000.00	2 CNG Heavy-Duty Trucks	$0.00	Yes
ML06031	City of Inglewood	4/4/2007	6/3/2013	9/3/2015	$150,000.00	$65,602.40	Purchase 4 H-D LPG Vehicles & Install LPG	$84,397.60	Yes
ML06032	City of Rancho Cucamonga	2/13/2007	3/12/2013	2/12/2014	$237,079.00	$237,079.00	New CNG Station & 2 CNG Dump Trucks	$0.00	Yes
ML06033	City of Cathedral City	11/17/2006	12/16/2012	12/16/2013	$125,000.00	$125,000.00	5 Heavy-Duty CNG Trucks	$0.00	Yes
ML06034	City of South Pasadena	9/25/2006	9/24/2012		$16,422.42	$16,422.42	2 Nat. Gas Transit Buses	$0.00	Yes
ML06035	City of Hemet, Public Works	11/10/2006	12/9/2012	1/9/2017	$338,107.00	$323,107.00	7 Nat Gas Trucks & New Nat Gas Infrastruct	$15,000.00	Yes
ML06036	City of Riverside	3/23/2007	3/22/2013		$200,000.00	$200,000.00	8 Heavy-Duty Nat Gas Vehicles	$0.00	Yes
ML06038	City of Los Angeles, Department of	5/21/2007	1/20/2014		$625,000.00	$625,000.00	25 CNG Street Sweepers	$0.00	Yes
ML06044	City of Pomona	12/15/2006	3/14/2013		$50,000.00	$50,000.00	2 CNG Street Sweepers	$0.00	Yes
ML06052	City of Hemet, Public Works	4/20/2007	2/19/2013		$25,000.00	$25,000.00	Purchase One CNG Dump Truck	$0.00	Yes
ML06053	City of Burbank	5/4/2007	7/3/2013		$125,000.00	$125,000.00	Five Nat. Gas Refuse Trucks	$0.00	Yes
ML06054	Los Angeles County Department of P	6/17/2009	6/16/2016		$125,000.00	$125,000.00	3 CNG & 2 LPG HD Trucks	$0.00	Yes
ML06056	City of Los Angeles, Dept. of Genera	11/30/2007	11/29/2008		$350,000.00	$350,000.00	Maintenance Facility Mods.	$0.00	Yes
ML06057	City of Rancho Cucamonga	8/28/2007	6/27/2013	8/27/2014	$100,000.00	$100,000.00	4 H.D. Nat. Gas Vehicles	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML06058	City of Santa Monica	7/12/2007	7/11/2013		$149,925.00	$0.00	3 H.D. CNG Trucks & CNG Fueling Station	$149,925.00	No
ML06060	City of Temple City	6/12/2007	6/11/2013		$31,885.00	$0.00	Upgrade existing CNG infrastructure	$31,885.00	No
ML06061	City of Chino Hills	4/30/2007	4/29/2013		$25,000.00	$25,000.00	One H.D. CNG Vehicle	$0.00	Yes
ML06062	City of Redlands	5/11/2007	5/10/2013		$100,000.00	$100,000.00	4 H.D. LNG Vehicles	$0.00	Yes
ML06063	City of Moreno Valley	3/23/2007	11/22/2012		$25,000.00	$25,000.00	One H.D. CNG Vehicle	$0.00	Yes
ML06064	City of South Pasadena	1/25/2008	11/24/2013	11/24/2014	$50,000.00	$50,000.00	2 H.D. CNG Vehicles	$0.00	Yes
ML06065	City of Walnut	6/29/2007	6/28/2013		$44,203.00	$44,203.00	Upgrade Existing CNG Infrastructure	$0.00	Yes
ML06066	City of Ontario, Housing & Municipal	5/30/2007	1/29/2013		$125,000.00	$125,000.00	5 H.D. CNG Vehicles	$0.00	Yes
ML06067	City of El Monte	3/17/2008	5/16/2014	11/16/2014	$157,957.00	$157,957.00	Upgrade existing CNG infrastructure	$0.00	Yes
ML06068	City of Claremont	8/28/2007	6/27/2013		$60,000.00	$60,000.00	Expand existing CNG infrastructure	$0.00	Yes
ML06069	City of Palos Verdes Estates	11/19/2007	11/18/2013		$25,000.00	$25,000.00	One H.D. CNG Vehicle	$0.00	Yes
ML06070	City of Colton	4/30/2008	2/28/2015	4/30/2015	$50,000.00	$0.00	Two CNG Pickups	$50,000.00	No
ML06071	City of Santa Monica	6/13/2014		11/30/2016	$149,925.00	$149,925.00	3 H.D. CNG Trucks & CNG Fueling Station	$0.00	Yes

Total: 36

FY 2006-2007 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Declined/Cancelled Contracts									
ML07031	City of Santa Monica				$180,000.00	$0.00	Upgrade N.G. Station to Add Hythane	$180,000.00	No
ML07032	City of Huntington Beach Public Wor				$25,000.00	$0.00	One H.D. CNG Vehicle	$25,000.00	No
ML07035	City of Los Angeles, General Service				$350,000.00	$0.00	New CNG Refueling Station/Southeast Yard	$350,000.00	No
ML07038	City of Palos Verdes Estates				$25,000.00	$0.00	One H.D. LPG Vehicle	$25,000.00	No
MS07010	Palos Verdes Peninsula Transit Auth				$80,000.00	$0.00	Repower 4 Transit Buses	$80,000.00	No
MS07014	Clean Energy Fuels Corp.				$350,000.00	$0.00	New L/CNG Station - SERRF	$350,000.00	No
MS07015	Baldwin Park Unified School District				$57,500.00	$0.00	New CNG Station	$57,500.00	No
MS07016	County of Riverside Fleet Services D				$36,359.00	$0.00	New CNG Station - Rubidoux	$36,359.00	No
MS07017	County of Riverside Fleet Services D				$33,829.00	$0.00	New CNG Station - Indio	$33,829.00	No
MS07018	City of Cathedral City				$350,000.00	$0.00	New CNG Station	$350,000.00	No
MS07021	City of Riverside				$350,000.00	$0.00	New CNG Station	$350,000.00	No
MS07050	Southern California Disposal Co.				$320,000.00	$0.00	Ten Nat. Gas Refuse Trucks	$320,000.00	No
MS07062	Caltrans Division of Equipment				$1,081,818.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$1,081,818.00	No
MS07065	ECCO Equipment Corp.				$174,525.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$174,525.00	No
MS07067	Recycled Materials Company of Calif				$99,900.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$99,900.00	No
MS07069	City of Burbank	5/9/2008	3/8/2010	9/8/2011	$8,895.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$8,895.00	No
MS07074	Albert W. Davies, Inc.	1/25/2008	11/24/2009		$39,200.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$39,200.00	No
MS07081	Clean Diesel Technologies, Inc.				$240,347.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$240,347.00	No
MS07082	DCL International, Inc.				$153,010.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$153,010.00	No
MS07083	Dinex Exhausts, Inc.				$52,381.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$52,381.00	No
MS07084	Donaldson Company, Inc.				$42,416.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$42,416.00	No
MS07085	Engine Control Systems Limited				$155,746.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$155,746.00	No
MS07086	Huss, LLC				$84,871.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$84,871.00	No
MS07087	Mann+Hummel GmbH				$189,361.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$189,361.00	No
MS07088	Nett Technologies, Inc.				$118,760.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$118,760.00	No
MS07089	Rypos, Inc.				$68,055.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$68,055.00	No
MS07090	Sud-Chemie				$27,345.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$27,345.00	No
Total: 27									
Closed Contracts									
ML07023	City of Riverside	6/20/2008	10/19/2014	7/19/2016	$462,500.00	$461,476.42	CNG Station Expansion/Purch. 14 H.D. Vehi	$1,023.58	Yes
ML07024	City of Garden Grove	3/7/2008	9/6/2014	7/6/2016	$75,000.00	$75,000.00	Three H.D. CNG Vehicles	$0.00	Yes
ML07025	City of San Bernardino	8/12/2008	7/11/2010		$350,000.00	$350,000.00	Maintenance Facility Modifications	$0.00	Yes
ML07026	City of South Pasadena	6/13/2008	6/12/2014		$25,000.00	$25,000.00	One H.D. CNG Vehicle	$0.00	Yes
ML07027	Los Angeles World Airports	6/3/2008	7/2/2014		$25,000.00	$25,000.00	One H.D. LNG Vehicle	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML07028	City of Los Angeles, General Service	3/13/2009	3/12/2014		$350,000.00	$350,000.00	New CNG Refueling Station/Hollywood Yard	$0.00	Yes
ML07029	City of Los Angeles, General Service	3/13/2009	3/12/2014		$350,000.00	$350,000.00	New CNG Refueling Station/Venice Yard	$0.00	Yes
ML07030	County of San Bernardino Public Wo	7/11/2008	9/10/2015		$200,000.00	$200,000.00	8 Natural Gas H.D. Vehicles	$0.00	Yes
ML07033	City of La Habra	5/21/2008	6/20/2014	11/30/2013	$25,000.00	$25,000.00	One H.D. Nat Gas Vehicle	$0.00	Yes
ML07034	City of Los Angeles, General Service	3/13/2009	3/12/2014		$350,000.00	$350,000.00	New CNG Refueling Station/Van Nuys Yard	$0.00	Yes
ML07036	City of Alhambra	1/23/2009	2/22/2015		$50,000.00	$50,000.00	2 H.D. CNG Vehicles	$0.00	Yes
ML07037	City of Los Angeles, General Service	10/8/2008	10/7/2015		$255,222.00	$255,222.00	Upgrade LNG/LCNG Station/East Valley Yar	$0.00	Yes
ML07039	City of Baldwin Park	6/6/2008	6/5/2014	8/5/2015	$50,000.00	$50,000.00	Two N.G. H.D. Vehicles	$0.00	Yes
ML07040	City of Moreno Valley	6/3/2008	9/2/2014		$25,000.00	$25,000.00	One Heavy-Duty CNG Vehicle	$0.00	Yes
ML07041	City of La Quinta	6/6/2008	6/5/2014		$25,000.00	$25,000.00	One CNG Street Sweeper	$0.00	Yes
ML07042	City of La Quinta	8/15/2008	9/14/2010		$100,000.00	$100,000.00	Street Sweeping Operations	$0.00	Yes
ML07043	City of Redondo Beach	9/28/2008	7/27/2014	10/27/2016	$125,000.00	$125,000.00	Five H.D. CNG Transit Vehicles	$0.00	Yes
ML07046	City of Culver City Transportation De	5/2/2008	5/1/2014		$25,000.00	$25,000.00	One H.D. Nat. Gas Vehicle	$0.00	Yes
ML07047	City of Cathedral City	6/16/2008	9/15/2014	3/15/2015	$225,000.00	$225,000.00	Two H.D. Nat. Gas Vehicles/New CNG Fueli	$0.00	Yes
ML07048	City of Cathedral City	9/19/2008	10/18/2010		$100,000.00	$84,972.45	Street Sweeping Operations	$15,027.55	Yes
MS07001	A-Z Bus Sales, Inc.	12/28/2006	12/31/2007	2/29/2008	$1,920,000.00	$1,380,000.00	CNG School Bus Buydown	$540,000.00	Yes
MS07002	BusWest	1/19/2007	12/31/2007	3/31/2008	$840,000.00	$840,000.00	CNG School Bus Buydown	$0.00	Yes
MS07003	Westport Fuel Systems, Inc.	11/2/2007	12/31/2011	6/30/2013	$1,500,000.00	$1,499,990.00	Advanced Nat. Gas Engine Incentive Progra	$10.00	Yes
MS07005	S-W Compressors	3/17/2008	3/16/2010		$60,000.00	$7,500.00	Mountain CNG School Bus Demo Program-	$52,500.00	Yes
MS07006	Coachella Valley Association of Gov	2/28/2008	10/27/2008		$400,000.00	$400,000.00	Coachella Valley PM10 Reduction Street Sw	$0.00	Yes
MS07007	Los Angeles World Airports	5/2/2008	11/1/2014		$420,000.00	$420,000.00	Purchase CNG 21 Transit Buses	$0.00	Yes
MS07009	Orange County Transportation Autho	5/14/2008	4/13/2016		$800,000.00	$800,000.00	Purchase 40 Transit Buses	$0.00	Yes
MS07011	L A Service Authority for Freeway E	3/12/2010	5/31/2011	9/30/2011	$700,000.00	$700,000.00	"511" Commuter Services Campaign	$0.00	Yes
MS07012	City of Los Angeles, General Service	6/13/2008	6/12/2009	6/12/2010	$50,000.00	$50,000.00	Maintenance Facility Modifications	$0.00	Yes
MS07013	Rainbow Disposal Company, Inc.	1/25/2008	3/24/2014	9/24/2014	$350,000.00	$350,000.00	New High-Volume CNG Station	$0.00	Yes
MS07019	City of Cathedral City	1/9/2009	6/8/2010		$32,500.00	$32,500.00	Maintenance Facility Modifications	$0.00	Yes
MS07020	Avery Petroleum	5/20/2009	7/19/2015		$250,000.00	$250,000.00	New CNG Station	$0.00	Yes
MS07049	Palm Springs Disposal Services	10/23/2008	11/22/2014	9/22/2016	$96,000.00	$96,000.00	Three Nat. Gas Refuse Trucks	$0.00	Yes
MS07051	City of San Bernardino	8/12/2008	12/11/2014		$480,000.00	$480,000.00	15 Nat. Gas Refuse Trucks	$0.00	Yes
MS07052	City of Redlands	7/30/2008	11/29/2014		$160,000.00	$160,000.00	Five Nat. Gas Refuse Trucks	$0.00	Yes
MS07053	City of Claremont	7/31/2008	12/30/2014		$96,000.00	$96,000.00	Three Nat. Gas Refuse Trucks	$0.00	Yes
MS07054	Republic Services, Inc.	3/7/2008	9/6/2014	9/6/2016	$1,280,000.00	$1,280,000.00	40 Nat. Gas Refuse Trucks	$0.00	Yes
MS07055	City of Culver City Transportation De	7/8/2008	9/7/2014		$192,000.00	$192,000.00	Six Nat. Gas Refuse Trucks	$0.00	Yes
MS07056	City of Whittier	9/5/2008	3/4/2015		$32,000.00	$32,000.00	One Nat. Gas Refuse Trucks	$0.00	Yes
MS07057	CR&R, Inc.	7/31/2008	8/30/2014	6/30/2015	$896,000.00	$896,000.00	28 Nat. Gas Refuse Trucks	$0.00	Yes
MS07058	The Better World Group	11/17/2007	11/16/2009	11/16/2011	$247,690.00	$201,946.21	MSRC Programmatic Outreach Services	$45,743.79	Yes
MS07059	County Sanitation Districts of L.A. Co	9/5/2008	9/4/2010	7/14/2012	$231,500.00	$231,500.00	Off-Road Diesel Equipment Retrofit Program	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS07060	Community Recycling & Resource R	3/7/2008	1/6/2010	7/6/2011	$177,460.00	$98,471.00	Off-Road Diesel Equipment Retrofit Program	$78,989.00	Yes
MS07061	City of Los Angeles, Department of	10/31/2008	8/30/2010	2/28/2013	$40,626.00	$40,626.00	Off-Road Diesel Equipment Retrofit Program	$0.00	Yes
MS07063	Shimmick Construction Company, In	4/26/2008	2/25/2010	8/25/2011	$80,800.00	$11,956.37	Off-Road Diesel Equipment Retrofit Program	$68,843.63	Yes
MS07064	Altfillisch Contractors, Inc.	9/19/2008	7/18/2010	1/18/2011	$160,000.00	$155,667.14	Off-Road Diesel Equipment Retrofit Program	$4,332.86	Yes
MS07068	Sukut Equipment Inc.	1/23/2009	11/22/2010	5/22/2012	$26,900.00	$26,900.00	Off-Road Diesel Equipment Retrofit Program	$0.00	Yes
MS07070	Griffith Company	4/30/2008	2/28/2010	8/28/2012	$168,434.00	$125,504.00	Off-Road Diesel Equipment Retrofit Program	$42,930.00	Yes
MS07071	Tiger 4 Equipment Leasing	9/19/2008	7/18/2010	1/18/2013	$210,937.00	$108,808.97	Off-Road Diesel Equipment Retrofit Program	$102,128.03	Yes
MS07072	City of Culver City Transportation De	4/4/2008	2/3/2010	8/3/2011	$72,865.00	$72,865.00	Off-Road Diesel Equipment Retrofit Program	$0.00	Yes
MS07075	Dan Copp Crushing	9/17/2008	7/16/2010	1/16/2012	$73,600.00	$40,200.00	Off-Road Diesel Equipment Retrofit Program	$33,400.00	Yes
MS07076	Reed Thomas Company, Inc.	8/15/2008	6/14/2010	3/14/2012	$339,073.00	$100,540.00	Off-Road Diesel Equipment Retrofit Program	$238,533.00	Yes
MS07077	USA Waste of California, Inc.	5/1/2009	12/31/2014		$160,000.00	$160,000.00	Five Nat. Gas Refuse Trucks (Santa Ana)	$0.00	Yes
MS07078	USA Waste of California, Inc.	5/1/2009	12/31/2014	12/31/2015	$256,000.00	$256,000.00	Eight Nat. Gas Refuse Trucks (Dewey's)	$0.00	Yes
MS07079	Riverside County Transportation Co	1/30/2009	7/29/2013	12/31/2011	$20,000.00	$15,165.45	BikeMetro Website Migration	$4,834.55	Yes
MS07080	City of Los Angeles, Bureau of Sanit	10/31/2008	8/30/2010	8/28/2016	$63,192.00	$62,692.00	Off-Road Diesel Equipment Retrofit Program	$500.00	No
MS07091	BusWest	10/16/2009	3/15/2010		$33,660.00	$33,660.00	Provide Lease for 2 CNG School Buses	$0.00	Yes
MS07092	Riverside County Transportation Co	9/1/2010	10/31/2011		$350,000.00	$350,000.00	"511" Commuter Services Campaign	$0.00	Yes
Total: 58									
Closed/Incomplete Contracts									
ML07045	City of Inglewood	2/6/2009	4/5/2015		$75,000.00	$25,000.00	3 H.D. Nat. Gas Vehicles	$50,000.00	No
MS07004	BusWest	7/2/2007	7/1/2009		$90,928.00	$68,196.00	Provide Lease for 2 CNG School Buses	$22,732.00	No
MS07066	Skanska USA Civil West California D	6/28/2008	4/27/2010	10/27/2010	$111,700.00	$36,128.19	Off-Road Diesel Equipment Retrofit Program	$75,571.81	No
MS07073	PEED Equipment Co.	10/31/2008	8/30/2010		$11,600.00	$0.00	Off-Road Diesel Equipment Retrofit Program	$11,600.00	No
Total: 4									
Open/Complete Contracts									
ML07044	City of Santa Monica	9/8/2008	3/7/2015	3/7/2017	$600,000.00	$600,000.00	24 H.D. Nat. Gas Vehicles	$0.00	No
MS07008	City of Los Angeles, Department of T	9/18/2009	5/17/2020	9/17/2017	$1,900,000.00	$1,900,000.00	Purchase 95 Transit Buses	$0.00	Yes
MS07022	CSULA Hydrogen Station and Resea	10/30/2009	12/29/2015	10/29/2019	$250,000.00	$250,000.00	New Hydrogen Fueling Station	$0.00	Yes
Total: 3									

FY 2007-2008 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
ML08028	City of Santa Monica	9/11/2009	9/10/2016	5/10/2019	$600,000.00	$0.00	24 CNG Heavy-Duty Vehicles	$600,000.00	No
ML08043	City of Desert Hot Springs	9/25/2009	3/24/2016	3/24/2021	$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	No
MS08007	United Parcel Service West Region	12/10/2008	10/9/2014	4/9/2019	$300,000.00	$0.00	10 H.D. Nat. Gas Vehicles	$300,000.00	No
MS08013	United Parcel Service West Region	12/10/2008	10/9/2014	3/9/2019	$480,000.00	$216,000.00	12 H.D. Nat. Gas Yard Tractors	$264,000.00	No
MS08068	Regents of the University of Californi	11/5/2010	11/4/2017	11/4/2019	$400,000.00	$0.00	Hydrogen Station	$400,000.00	No
Total: 5									
Declined/Cancelled Contracts									
ML08032	City of Irvine	5/1/2009	8/31/2010		$9,000.00	$0.00	36 Vehicles (Diagnostic)	$9,000.00	No
ML08041	City of Los Angeles, Dept of Transpo	8/6/2010	7/5/2011	12/5/2011	$8,800.00	$0.00	73 Vehicles (Diagnostic)	$8,800.00	No
ML08049	City of Cerritos	3/20/2009	1/19/2015	2/19/2017	$25,000.00	$0.00	1 CNG Heavy-Duty Vehicle	$25,000.00	No
ML08051	City of Colton				$75,000.00	$0.00	3 CNG Heavy-Duty Vehicles	$75,000.00	No
ML08080	City of Irvine	5/1/2009	5/31/2015		$50,000.00	$0.00	Two Heavy-Duty Nat. Gas Vehicles	$50,000.00	No
MS08002	Orange County Transportation Autho				$1,500,000.00	$0.00	Big Rig Freeway Service Patrol	$1,500,000.00	No
MS08008	Diversified Truck Rental & Leasing				$300,000.00	$0.00	10 H.D. Nat. Gas Vehicles	$300,000.00	No
MS08010	Orange County Transportation Autho				$10,000.00	$0.00	20 H.D. Nat. Gas Vehicles	$10,000.00	No
MS08011	Green Fleet Systems, LLC				$10,000.00	$0.00	30 H.D. Nat. Gas Vehicles	$10,000.00	No
MS08052	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014	11/23/2015	$100,000.00	$0.00	New CNG Station - Fontana	$100,000.00	No
MS08054	Clean Energy Fuels Corp.				$400,000.00	$0.00	New LNG Station - Fontana	$400,000.00	No
MS08055	Clean Energy Fuels Corp.	11/26/2009	3/25/2016	3/25/2017	$400,000.00	$0.00	New LNG Station - Long Beach-Pier S	$400,000.00	No
MS08059	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014		$100,000.00	$0.00	New CNG Station - San Bernardino	$100,000.00	No
MS08060	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014		$100,000.00	$0.00	New CNG Station - Azusa	$100,000.00	No
MS08062	Go Natural Gas	9/25/2009	1/24/2016	1/24/2017	$400,000.00	$0.00	New CNG Station - Rialto	$400,000.00	No
MS08074	Fontana Unified School District	11/14/2008	12/13/2014		$200,000.00	$0.00	Expansion of Existing CNG station	$200,000.00	No
MS08077	Hythane Company, LLC				$144,000.00	$0.00	Upgrade Station to Hythane	$144,000.00	No
Total: 17									
Closed Contracts									
ML08023	City of Villa Park	11/7/2008	10/6/2012		$6,500.00	$5,102.50	Upgrade of Existing Refueling Facility	$1,397.50	Yes
ML08026	Los Angeles County Department of P	7/20/2009	7/19/2016		$250,000.00	$250,000.00	10 LPG Heavy-Duty Vehicles	$0.00	Yes
ML08027	Los Angeles County Department of P	7/20/2009	1/19/2011	1/19/2012	$6,901.00	$5,124.00	34 Vehicles (Diagnostic)	$1,777.00	Yes
ML08029	City of Gardena	3/19/2009	1/18/2015		$25,000.00	$25,000.00	1 Propane Heavy-Duty Vehicle	$0.00	Yes
ML08030	City of Azusa	5/14/2010	3/13/2016		$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	No
ML08031	City of Claremont	3/27/2009	3/26/2013	3/26/2015	$97,500.00	$97,500.00	Upgrade of Existing CNG Station, Purchase	$0.00	Yes
ML08033	County of San Bernardino Public Wo	4/3/2009	2/2/2010		$14,875.00	$14,875.00	70 Vehicles (Diagnostic)	$0.00	Yes
ML08034	County of San Bernardino Public Wo	3/27/2009	7/26/2015		$150,000.00	$150,000.00	8 CNG Heavy-Duty Vehicles	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML08035	City of La Verne	3/6/2009	11/5/2009		$11,925.00	$11,925.00	53 Vehicles (Diagnostic)	$0.00	Yes
ML08036	City of South Pasadena	5/12/2009	7/11/2013		$169,421.00	$169,421.00	New CNG Station	$0.00	Yes
ML08037	City of Glendale	5/20/2009	5/19/2015		$325,000.00	$325,000.00	13 CNG Heavy-Duty Vehicles	$0.00	Yes
ML08039	City of Rancho Palos Verdes	6/5/2009	8/4/2015		$50,000.00	$50,000.00	2 LPG Transit Buses	$0.00	Yes
ML08042	City of Ontario, Housing & Municipal	5/1/2009	1/31/2016		$175,000.00	$175,000.00	7 CNG Heavy-Duty Vehicles	$0.00	Yes
ML08044	City of Chino	3/19/2009	3/18/2015		$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	Yes
ML08045	City of Santa Clarita	2/20/2009	6/19/2010		$3,213.00	$3,150.00	14 Vehicles (Diagnostic)	$63.00	Yes
ML08046	City of Paramount	2/20/2009	2/19/2015		$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	Yes
ML08047	City of Culver City Transportation De	5/12/2009	8/11/2015		$150,000.00	$150,000.00	6 CNG Heavy-Duty Vehicles	$0.00	Yes
ML08048	City of Santa Clarita	2/20/2009	6/19/2015		$25,000.00	$25,000.00	1 CNG Heavy-Duty Vehicle	$0.00	Yes
ML08050	City of Laguna Beach Public Works	8/12/2009	4/11/2016	10/11/2016	$75,000.00	$75,000.00	3 LPG Trolleys	$0.00	Yes
MS08001	Los Angeles County MTA	12/10/2010	6/9/2014		$1,500,000.00	$1,499,999.66	Big Rig Freeway Service Patrol	$0.34	Yes
MS08003	A-Z Bus Sales, Inc.	5/2/2008	12/31/2008	2/28/2009	$1,480,000.00	$1,400,000.00	Alternative Fuel School Bus Incentive Progra	$80,000.00	Yes
MS08004	BusWest	5/2/2008	12/31/2008		$1,440,000.00	$1,440,000.00	Alternative Fuel School Bus Incentive Progra	$0.00	Yes
MS08005	Burrtec Waste Industries, Inc.	10/23/2008	11/22/2014	10/22/2015	$450,000.00	$450,000.00	15 H.D. Nat. Gas Vehicles - Azusa	$0.00	Yes
MS08006	Burrtec Waste Industries, Inc.	10/23/2008	11/22/2014	10/22/2015	$450,000.00	$450,000.00	15 H.D. Nat. Gas Vehicles - Saugus	$0.00	Yes
MS08009	Los Angeles World Airports	12/24/2008	12/23/2014		$870,000.00	$870,000.00	29 H.D. Nat. Gas Vehicles	$0.00	Yes
MS08012	California Cartage Company, LLC	12/21/2009	10/20/2015	4/20/2016	$480,000.00	$480,000.00	12 H.D. Nat. Gas Yard Tractors	$0.00	Yes
MS08014	City of San Bernardino	12/5/2008	6/4/2015		$390,000.00	$360,000.00	13 H.D. Nat. Gas Vehicles	$30,000.00	Yes
MS08015	Yosemite Waters	5/12/2009	5/11/2015		$180,000.00	$117,813.60	11 H.D. Propane Vehicles	$62,186.40	Yes
MS08016	TransVironmental Solutions, Inc.	1/23/2009	12/31/2010	9/30/2011	$227,198.00	$80,351.34	Rideshare 2 School Program	$146,846.66	Yes
MS08017	Omnitrans	12/13/2008	12/12/2015	12/12/2016	$900,000.00	$900,000.00	30 CNG Buses	$0.00	Yes
MS08019	Enterprise Rent-A-Car Company of L	2/12/2010	7/11/2016		$300,000.00	$300,000.00	10 CNG Vehicles	$0.00	Yes
MS08020	Ware Disposal Company, Inc.	11/25/2008	2/24/2016		$900,000.00	$900,000.00	30 CNG Vehicles	$0.00	Yes
MS08021	CalMet Services, Inc.	1/9/2009	1/8/2016	7/8/2016	$900,000.00	$900,000.00	30 CNG Vehicles	$0.00	Yes
MS08022	SunLine Transit Agency	12/18/2008	3/17/2015		$311,625.00	$311,625.00	15 CNG Buses	$0.00	Yes
MS08053	City of Los Angeles, Bureau of Sanit	2/18/2009	12/17/2015		$400,000.00	$400,000.00	New LNG/CNG Station	$0.00	Yes
MS08056	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		$400,000.00	$400,000.00	New LNG Station - POLB-Anah. & I	$0.00	Yes
MS08057	Orange County Transportation Autho	5/14/2009	7/13/2015		$400,000.00	$400,000.00	New CNG Station - Garden Grove	$0.00	Yes
MS08061	Clean Energy Fuels Corp.	12/4/2009	3/3/2015		$400,000.00	$400,000.00	New CNG Station - L.A.-La Cienega	$0.00	Yes
MS08063	Go Natural Gas	9/25/2009	1/24/2016	1/24/2017	$400,000.00	$400,000.00	New CNG Station - Moreno Valley	$0.00	Yes
MS08064	Hemet Unified School District	1/9/2009	3/8/2015		$75,000.00	$75,000.00	Expansion of Existing Infrastructure	$0.00	Yes
MS08065	Pupil Transportation Cooperative	11/20/2008	7/19/2014		$10,500.00	$10,500.00	Existing CNG Station Modifications	$0.00	Yes
MS08066	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		$400,000.00	$400,000.00	New CNG Station - Palm Spring Airport	$0.00	Yes
MS08067	Trillium CNG	3/19/2009	6/18/2015	6/18/2016	$311,600.00	$254,330.00	New CNG Station	$57,270.00	Yes
MS08069	Perris Union High School District	6/5/2009	8/4/2015	8/4/2016	$225,000.00	$225,000.00	New CNG Station	$0.00	Yes
MS08070	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		$400,000.00	$400,000.00	New CNG Station - Paramount	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS08071	ABC Unified School District	1/16/2009	1/15/2015		$63,000.00	$63,000.00	New CNG Station	$0.00	Yes
MS08072	Clean Energy Fuels Corp.	12/4/2009	3/3/2015		$400,000.00	$354,243.38	New CNG Station - Burbank	$45,756.62	Yes
MS08073	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		$400,000.00	$400,000.00	New CNG Station - Norwalk	$0.00	Yes
MS08075	Disneyland Resort	12/10/2008	2/1/2015		$200,000.00	$200,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
MS08078	SunLine Transit Agency	12/10/2008	6/9/2015	2/9/2016	$189,000.00	$189,000.00	CNG Station Upgrade	$0.00	Yes
MS09002	A-Z Bus Sales, Inc.	11/7/2008	12/31/2009	12/31/2010	$2,520,000.00	$2,460,000.00	Alternative Fuel School Bus Incentive Progra	$60,000.00	Yes
MS09004	A-Z Bus Sales, Inc.	1/30/2009	3/31/2009		$156,000.00	$156,000.00	Alternative Fuel School Bus Incentive Progra	$0.00	Yes
MS09047	BusWest	7/9/2010	12/31/2010	4/30/2011	$480,000.00	$480,000.00	Alternative Fuel School Bus Incentive Progra	$0.00	Yes
Total: 53									
Closed/Incomplete Contracts									
ML08025	Los Angeles County Department of P	10/30/2009	3/29/2011		$75,000.00	$0.00	150 Vehicles (Diagnostic)	$75,000.00	No
MS08079	ABC Unified School District	1/16/2009	12/15/2009	12/15/2010	$50,000.00	$0.00	Maintenance Facility Modifications	$50,000.00	No
Total: 2									
Open/Complete Contracts									
ML08024	City of Anaheim	7/9/2010	7/8/2017	1/8/2018	$425,000.00	$425,000.00	9 LPG Buses and 8 CNG Buses	$0.00	Yes
ML08038	Los Angeles Department of Water an	7/16/2010	7/15/2017		$1,050,000.00	$1,050,000.00	42 CNG Heavy-Duty Vehicles	$0.00	Yes
ML08040	City of Riverside	9/11/2009	9/10/2016	3/10/2019	$455,500.00	$455,500.00	16 CNG Vehicles, Expand CNG Station & M	$0.00	Yes
MS08018	Los Angeles County Department of P	8/7/2009	10/6/2016	4/6/2018	$60,000.00	$60,000.00	2 CNG Vehicles	$0.00	Yes
MS08058	Clean Energy Fuels Corp.	11/26/2009	3/25/2016	3/25/2017	$400,000.00	$400,000.00	New CNG Station - Ontario Airport	$0.00	Yes
MS08076	Azusa Unified School District	10/17/2008	11/16/2014	1/31/2017	$172,500.00	$172,500.00	New CNG station and maint. Fac. Modificati	$0.00	Yes
Total: 6									

FY 2008-2009 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
ML09033	City of Beverly Hills	3/4/2011	5/3/2017	5/3/2018	$550,000.00	$100,000.00	10 Nat. Gas Heavy-Duty Vehicles & CNG St	$450,000.00	No
ML09036	City of Long Beach Fleet Services B	5/7/2010	5/6/2017	5/6/2020	$875,000.00	$525,000.00	Purchase 35 LNG Refuse Trucks	$350,000.00	No
Total: 2									
Declined/Cancelled Contracts									
ML09017	County of San Bernardino Public Wo	1/28/2010	7/27/2016		$200,000.00	$0.00	8 Nat. Gas Heavy-Duty Vehicles	$200,000.00	No
ML09018	Los Angeles Department of Water an	7/16/2010	9/15/2012		$850,000.00	$0.00	Retrofit 85 Off-Road Vehicles w/DECS	$850,000.00	No
ML09019	City of San Juan Capistrano Public	12/4/2009	11/3/2010		$10,125.00	$0.00	Remote Vehicle Diagnostics/45 Vehicles	$10,125.00	No
ML09022	Los Angeles County Department of P				$8,250.00	$0.00	Remote Vehicle Diagnostics/15 Vehicles	$8,250.00	No
ML09025	Los Angeles County Department of P	10/15/2010	12/14/2012	6/14/2013	$50,000.00	$0.00	Remote Vehicle Diagnostics/85 Vehicles	$50,000.00	No
ML09028	Riverside County Waste Manageme				$140,000.00	$0.00	Retrofit 7 Off-Road Vehicles w/DECS	$140,000.00	No
ML09039	City of Inglewood				$310,000.00	$0.00	Purchase 12 H.D. CNG Vehicles and Remot	$310,000.00	No
ML09040	City of Cathedral City				$83,125.00	$0.00	Purchase 3 H.D. CNG Vehicles and Remote	$83,125.00	No
ML09044	City of San Dimas				$425,000.00	$0.00	Install CNG Station and Purchase 1 CNG S	$425,000.00	No
ML09045	City of Orange				$125,000.00	$0.00	Purchase 5 CNG Sweepers	$125,000.00	No
MS09003	FuelMaker Corporation				$296,000.00	$0.00	Home Refueling Apparatus Incentives	$296,000.00	No
Total: 11									
Closed Contracts									
ML09007	City of Rancho Cucamonga	2/26/2010	4/25/2012		$117,500.00	$62,452.57	Maintenance Facility Modification	$55,047.43	Yes
ML09010	City of Palm Springs	1/8/2010	2/7/2016		$25,000.00	$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	$0.00	Yes
ML09011	City of San Bernardino	2/19/2010	5/18/2016		$250,000.00	$250,000.00	10 Nat. Gas Heavy-Duty Vehicles	$0.00	Yes
ML09012	City of Gardena	3/12/2010	11/11/2015		$25,000.00	$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	$0.00	Yes
ML09013	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	$144,470.00	$128,116.75	Traffic Signal Synchr./Moreno Valley	$16,353.25	Yes
ML09014	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	$113,030.00	$108,495.94	Traffic Signal Synchr./Corona	$4,534.06	Yes
ML09015	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	$80,060.00	$79,778.52	Traffic Signal Synchr./Co. of Riverside	$281.48	Yes
ML09016	County of San Bernardino Public Wo	1/28/2010	3/27/2014		$50,000.00	$50,000.00	Install New CNG Station	$0.00	Yes
ML09020	County of San Bernardino	8/16/2010	2/15/2012		$49,770.00	$49,770.00	Remote Vehicle Diagnostics/252 Vehicles	$0.00	Yes
ML09021	City of Palm Desert	7/9/2010	3/8/2012		$39,450.00	$38,248.87	Traffic Signal Synchr./Rancho Mirage	$1,201.13	Yes
ML09024	Los Angeles County Department of P	10/15/2010	12/14/2012	6/14/2013	$400,000.00	$0.00	Maintenance Facility Modifications	$400,000.00	No
ML09027	Los Angeles County Department of P	7/23/2010	3/22/2012	6/22/2012	$150,000.00	$150,000.00	Freeway Detector Map Interface	$0.00	Yes
ML09029	City of Whittier	11/6/2009	4/5/2016		$25,000.00	$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	$0.00	Yes
ML09030	City of Los Angeles GSD/Fleet Servi	6/18/2010	6/17/2011		$22,310.00	$22,310.00	Remote Vehicle Diagnostics/107 Vehicles	$0.00	Yes
ML09034	City of La Palma	11/25/2009	6/24/2015		$25,000.00	$25,000.00	1 LPG Heavy-Duty Vehicle	$0.00	Yes
ML09037	City of Redondo Beach	6/18/2010	6/17/2016		$50,000.00	$50,000.00	Purchase Two CNG Sweepers	$0.00	Yes
ML09046	City of Newport Beach	5/20/2010	5/19/2016		$162,500.00	$162,500.00	Upgrade Existing CNG Station, Maintenance	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML09047	Los Angeles County Department of P	8/13/2014	8/12/2015	11/12/2015	$400,000.00	$272,924.53	Maintenance Facility Modifications	$127,075.47	No
MS09001	Administrative Services Co-Op/Long	3/5/2009	6/30/2012	12/31/2013	$225,000.00	$150,000.00	15 CNG Taxicabs	$75,000.00	Yes
MS09005	Gas Equipment Systems, Inc.	6/19/2009	10/18/2010		$71,000.00	$71,000.00	Provide Temp. Fueling for Mountain Area C	$0.00	Yes
Total: 20									
Open/Complete Contracts									
ML09008	City of Culver City Transportation De	1/19/2010	7/18/2016	7/18/2017	$175,000.00	$175,000.00	8 Nat. Gas Heavy-Duty Vehicles	$0.00	Yes
ML09009	City of South Pasadena	11/5/2010	12/4/2016	3/4/2019	$125,930.00	$125,930.00	CNG Station Expansion	$0.00	Yes
ML09023	Los Angeles County Department of P	12/10/2010	12/9/2017		$50,000.00	$50,000.00	2 Heavy-Duty Alternative Fuel Transit Vehicl	$0.00	Yes
ML09026	Los Angeles County Department of P	10/15/2010	10/14/2017	4/14/2019	$150,000.00	$80,411.18	3 Off-Road Vehicles Repowers	$69,588.82	Yes
ML09031	City of Los Angeles, Department of	10/29/2010	10/28/2017		$825,000.00	$825,000.00	33 Nat. Gas Heavy-Duty Vehicles	$0.00	Yes
ML09032	Los Angeles World Airports	4/8/2011	4/7/2018		$175,000.00	$175,000.00	7 Nat. Gas Heavy-Duty Vehicles	$0.00	Yes
ML09035	City of Fullerton	6/17/2010	6/16/2017	12/16/2018	$450,000.00	$450,000.00	2 Heavy-Duty CNG Vehicles & Install CNG	$0.00	Yes
ML09038	City of Chino	9/27/2010	5/26/2017		$250,000.00	$250,000.00	Upgrade Existing CNG Station	$0.00	Yes
ML09041	City of Los Angeles, Bureau of Sanit	10/1/2010	9/30/2017		$875,000.00	$875,000.00	Purchase 35 H.D. Nat. Gas Vehicles	$0.00	Yes
ML09042	Los Angeles Department of Water an	12/10/2010	12/9/2017		$1,400,000.00	$1,400,000.00	Purchase 56 Dump Trucks	$0.00	Yes
ML09043	City of Covina	10/8/2010	4/7/2017	10/7/2018	$179,591.00	$179,591.00	Upgrade Existing CNG Station	$0.00	Yes
Total: 11									

FY 2010-2011 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
ML11020	City of Indio	2/1/2013	3/31/2019	9/30/2019	$30,000.00	$0.00	Retrofit one H.D. Vehicles w/DECS, repower	$30,000.00	No
ML11024	County of Los Angeles, Dept of Publi	12/5/2014	6/4/2022		$90,000.00	$0.00	Purchase 3 Nat. Gas H.D. Vehicles	$90,000.00	No
ML11029	City of Santa Ana	9/7/2012	3/6/2020	3/6/2023	$262,500.00	$0.00	Expansion of Existing CNG Station, Install N	$262,500.00	No
ML11032	City of Gardena	3/2/2012	9/1/2018	10/1/2020	$102,500.00	$0.00	Modify Maint. Facility, Expand CNG station,	$102,500.00	No
ML11036	City of Riverside	1/27/2012	1/26/2019	3/26/2021	$670,000.00	$0.00	Install New CNG Station, Purchase 9 H.D. N	$670,000.00	No
ML11038	City of Santa Monica	5/18/2012	7/17/2018		$400,000.00	$0.00	Maintenance Facility Modifications	$400,000.00	No
ML11040	City of South Pasadena	5/4/2012	1/3/2019	1/3/2022	$30,000.00	$0.00	Purchase 1 Nat. Gas H.D. Vehicle	$30,000.00	No
ML11041	City of Santa Ana	9/7/2012	11/6/2018	1/6/2021	$265,000.00	$34,651.86	Purchase 7 LPG H.D. Vehicles, Retrofit 6 H.	$230,348.14	No
ML11045	City of Newport Beach	2/3/2012	8/2/2018	8/2/2020	$30,000.00	$0.00	Purchase 1 Nat. Gas H.D. Vehicle	$30,000.00	No
MS11062	Load Center	9/7/2012	1/6/2016	12/6/2016	$175,384.00	$169,883.00	Retrofit Six Off-Road Vehicles under Showc	$5,501.00	No
MS11065	Temecula Valley Unified School Distr	8/11/2012	1/10/2019		$50,000.00	$46,112.64	Expansion of Existing CNG Station	$3,887.36	No
MS11085	City of Long Beach Fleet Services B	8/23/2013	12/22/2016		$159,012.00	$0.00	Retrofit Seven H.D. Off-Road Vehicles Unde	$159,012.00	No
MS11091	California Cartage Company, LLC	4/5/2013	8/4/2016	2/4/2018	$55,000.00	$0.00	Retrofit Two H.D. Off-Road Vehicles Under	$55,000.00	No
MS11092	Griffith Company	2/15/2013	6/14/2016	12/14/2017	$390,521.00	$78,750.00	Retrofit 17 H.D. Off-Road Vehicles Under Sh	$311,771.00	No
Total: 14									
Declined/Cancelled Contracts									
MS11013	Go Natural Gas, Inc.				$150,000.00	$0.00	New CNG Station - Huntington Beach	$150,000.00	No
MS11014	Go Natural Gas, Inc.				$150,000.00	$0.00	New CNG Station - Santa Ana	$150,000.00	No
MS11015	Go Natural Gas, Inc.				$150,000.00	$0.00	New CNG Station - Inglewood	$150,000.00	No
MS11046	Luis Castro				$40,000.00	$0.00	Repower One Heavy-Duty Vehicle	$40,000.00	No
MS11047	Ivan Borjas				$40,000.00	$0.00	Repower One Heavy-Duty Vehicle	$40,000.00	No
MS11048	Phase II Transportation				$1,080,000.00	$0.00	Repower 27 Heavy-Duty Vehicles	$1,080,000.00	No
MS11049	Ruben Caceras				$40,000.00	$0.00	Repower One Heavy-Duty Vehicle	$40,000.00	No
MS11050	Carlos Arrue				$40,000.00	$0.00	Repower One Heavy-Duty Vehicle	$40,000.00	No
MS11051	Francisco Vargas				$40,000.00	$0.00	Repower One Heavy-Duty Vehicle	$40,000.00	No
MS11053	Jose Ivan Soltero				$40,000.00	$0.00	Repower One Heavy-Duty Vehicle	$40,000.00	No
MS11054	Albino Meza				$40,000.00	$0.00	Repower One Heavy-Duty Vehicle	$40,000.00	No
MS11059	Go Natural Gas				$150,000.00	$0.00	New Public Access CNG Station - Paramou	$150,000.00	No
MS11063	Standard Concrete Products				$310,825.00	$0.00	Retrofit Two Off-Road Vehicles under Showc	$310,825.00	No
MS11070	American Honda Motor Company				$100,000.00	$0.00	Expansion of Existing CNG Station	$100,000.00	No
MS11072	Trillium USA Company DBA Californi				$150,000.00	$0.00	New Public Access CNG Station	$150,000.00	No
MS11077	DCL America Inc.				$263,107.00	$0.00	Retrofit of 13 Off-Road Diesel Vehicles with	$263,107.00	No
MS11083	Cattrac Construction, Inc.				$500,000.00	$0.00	Install DECS on Eight Off-Road Vehicles	$500,000.00	No
MS11084	Ivanhoe Energy Services and Develo				$66,750.00	$0.00	Retrofit One H.D. Off-Road Vehicle Under S	$66,750.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS11088	Diesel Emission Technologies				$32,750.00	$0.00	Retrofit Three H.D. Off-Road Vehicles Under	$32,750.00	No
MS11089	Diesel Emission Technologies				$9,750.00	$0.00	Retrofit One H.D. Off-Road Vehicle Under S	$9,750.00	No
MS11090	Diesel Emission Technologies				$14,750.00	$0.00	Retrofit One H.D. Off-Road Vehicle Under S	$14,750.00	No
Total: 21									
Closed Contracts									
ML11007	Coachella Valley Association of Gov	7/29/2011	7/28/2012		$250,000.00	$249,999.96	Regional PM10 Street Sweeping Program	$0.04	Yes
ML11027	City of Los Angeles, Dept. of Genera	5/4/2012	7/3/2015	1/3/2016	$300,000.00	$300,000.00	Maintenance Facility Modifications	$0.00	No
ML11035	City of La Quinta	11/18/2011	11/17/2012		$25,368.00	$25,368.00	Retrofit 3 On-Road Vehicles w/DECS	$0.00	Yes
MS11001	Mineral LLC	4/22/2011	4/30/2013	4/30/2015	$111,827.00	$103,136.83	Design, Develop, Host and Maintain MSRC	$8,690.17	Yes
MS11002	A-Z Bus Sales, Inc.	7/15/2011	12/31/2011	6/30/2013	$1,705,000.00	$1,705,000.00	Alternative Fuel School Bus Incentive Progra	$0.00	Yes
MS11003	BusWest	7/26/2011	12/31/2011	12/31/2012	$1,305,000.00	$1,305,000.00	Alternative Fuel School Bus Incentive Progra	$0.00	Yes
MS11004	Los Angeles County MTA	9/9/2011	2/29/2012		$450,000.00	$299,743.34	Clean Fuel Transit Service to Dodger Stadiu	$150,256.66	Yes
MS11006	Orange County Transportation Autho	10/7/2011	2/29/2012	8/31/2012	$268,207.00	$160,713.00	Metrolink Service to Angel Stadium	$107,494.00	Yes
MS11018	Orange County Transportation Autho	10/14/2011	1/31/2012		$211,360.00	$211,360.00	Express Bus Service to Orange County Fair	$0.00	Yes
MS11052	Krisda Inc	9/27/2012	6/26/2013		$120,000.00	$120,000.00	Repower Three Heavy-Duty Vehicles	$0.00	Yes
MS11056	The Better World Group	12/30/2011	12/29/2013	12/29/2015	$206,836.00	$186,953.46	Programmatic Outreach Services	$19,882.54	Yes
MS11057	Riverside County Transportation Co	7/28/2012	3/27/2013		$100,000.00	$89,159.40	Develop and Implement 511 "Smart Phone"	$10,840.60	Yes
MS11058	L A Service Authority for Freeway E	5/31/2013	4/30/2014		$123,395.00	$123,395.00	Implement 511 "Smart Phone" Application	$0.00	Yes
MS11061	Eastern Municipal Water District	3/29/2012	5/28/2015		$11,659.00	$1,450.00	Retrofit One Off-Road Vehicle under Showc	$10,209.00	Yes
MS11074	SunLine Transit Agency	5/11/2012	7/31/2012		$41,849.00	$22,391.00	Transit Service for Coachella Valley Festival	$19,458.00	Yes
MS11080	Southern California Regional Rail Au	4/6/2012	7/31/2012		$26,000.00	$26,000.00	Metrolink Service to Auto Club Speedway	$0.00	Yes
MS11086	DCL America Inc.	6/7/2013	10/6/2016		$500,000.00	$359,076.96	Retrofit Eight H.D. Off-Road Vehicles Under	$140,923.04	Yes
MS11087	Cemex Construction Material Pacific,	10/16/2012	2/15/2016		$448,766.00	$448,760.80	Retrofit 13 H.D. Off-Road Vehicles Under Sh	$5.20	Yes
Total: 18									
Closed/Incomplete Contracts									
MS11064	City of Hawthorne	7/28/2012	8/27/2018	8/27/2019	$175,000.00	$0.00	New Limited Access CNG Station	$175,000.00	No
MS11076	SA Recycling, LLC	5/24/2012	9/23/2015		$424,801.00	$0.00	Retrofit of 13 Off-Road Diesel Vehicles with	$424,801.00	No
MS11081	Metropolitan Stevedore Company	9/7/2012	1/6/2016		$45,416.00	$0.00	Install DECS on Two Off-Road Vehicles	$45,416.00	No
MS11082	Baumot North America, LLC	8/2/2012	12/1/2015		$65,958.00	$4,350.00	Install DECS on Four Off-Road Vehicles	$61,608.00	Yes
Total: 4									
Open/Complete Contracts									
ML11021	City of Whittier	1/27/2012	9/26/2018	6/26/2019	$210,000.00	$210,000.00	Purchase 7 Nat. Gas H.D. Vehicles	$0.00	Yes
ML11022	City of Anaheim	3/16/2012	7/15/2018		$150,000.00	$150,000.00	Purchase of 5 H.D. Vehicles	$0.00	Yes
ML11023	City of Rancho Cucamonga	4/20/2012	12/19/2018	9/19/2020	$260,000.00	$260,000.00	Expand Existing CNG Station, 2 H.D. Vehicl	$0.00	Yes
ML11025	County of Los Angeles Department o	3/14/2014	9/13/2021		$150,000.00	$150,000.00	Purchase 5 Nat. Gas H.D. Vehicles	$0.00	Yes
ML11026	City of Redlands	3/2/2012	10/1/2018		$90,000.00	$90,000.00	Purchase 3 Nat. Gas H.D. Vehicles	$0.00	Yes
ML11028	City of Glendale	1/13/2012	5/12/2018		$300,000.00	$300,000.00	Purchase 10 H.D. CNG Vehicles	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML11030	City of Fullerton	2/3/2012	3/2/2018		$109,200.00	$109,200.00	Purchase 2 Nat. Gas H.D. Vehicles, Retrofit	$0.00	Yes
ML11031	City of Culver City Transportation De	12/2/2011	12/1/2018		$300,000.00	$300,000.00	Purchase 10 H.D. Nat. Gas Vehicles	$0.00	Yes
ML11033	City of Los Angeles, Bureau of Sanit	3/16/2012	1/15/2019		$1,080,000.00	$1,080,000.00	Purchase 36 LNG H.D. Vehicles	$0.00	Yes
ML11034	City of Los Angeles, Department of	5/4/2012	1/3/2019		$630,000.00	$630,000.00	Purchase 21 H.D. CNG Vehicles	$0.00	Yes
ML11037	City of Anaheim	12/22/2012	12/21/2019		$300,000.00	$300,000.00	Purchase 12 Nat. Gas H.D. Vehicles	$0.00	Yes
ML11039	City of Ontario, Housing & Municipal	1/27/2012	9/26/2018		$180,000.00	$180,000.00	Purchase 6 Nat. Gas H.D. Vehicles	$0.00	Yes
ML11042	City of Chino	2/17/2012	4/16/2018		$30,000.00	$30,000.00	Purchase 1 Nat. Gas H.D. Vehicle, Repower	$0.00	Yes
ML11043	City of Hemet Public Works	2/3/2012	2/2/2019		$60,000.00	$60,000.00	Purchase 2 H.D. Nat. Gas Vehicles	$0.00	Yes
ML11044	City of Ontario, Housing & Municipal	1/27/2012	6/26/2019		$400,000.00	$400,000.00	Expand Existing CNG Station	$0.00	Yes
MS11008	USA Waste of California, Inc.	10/24/2013	4/23/2020		$125,000.00	$125,000.00	Expansion of Existing LCNG Station	$0.00	Yes
MS11009	USA Waste of California, Inc.	10/24/2013	4/23/2020		$125,000.00	$125,000.00	Expansion of Existing LCNG Station	$0.00	Yes
MS11010	Border Valley Trading	8/26/2011	10/25/2017	4/25/2020	$150,000.00	$150,000.00	New LNG Station	$0.00	Yes
MS11011	EDCO Disposal Corporation	12/30/2011	4/29/2019		$100,000.00	$100,000.00	New CNG Station - Signal Hill	$0.00	Yes
MS11012	EDCO Disposal Corporation	12/30/2011	4/29/2019		$100,000.00	$100,000.00	New CNG Station - Buena Park	$0.00	Yes
MS11016	CR&R Incorporated	4/12/2013	10/11/2019		$100,000.00	$100,000.00	New CNG Station - Perris	$0.00	Yes
MS11017	CR&R, Inc.	3/2/2012	2/1/2018		$100,000.00	$100,000.00	Expansion of existing station - Garden Grove	$0.00	Yes
MS11019	City of Corona	11/29/2012	4/28/2020		$225,000.00	$225,000.00	Expansion of Existing CNG Station	$0.00	Yes
MS11055	KEC Engineering	2/3/2012	8/2/2018	8/2/2019	$200,000.00	$200,000.00	Repower 5 H.D. Off-Road Vehicles	$0.00	Yes
MS11060	Rowland Unified School District	8/17/2012	1/16/2019	1/16/2020	$175,000.00	$175,000.00	New Limited Access CNG Station	$0.00	Yes
MS11066	Torrance Unified School District	11/19/2012	9/18/2018		$42,296.00	$42,296.00	Expansion of Existing CNG Station	$0.00	Yes
MS11067	City of Redlands	5/24/2012	11/23/2018	11/23/2019	$85,000.00	$85,000.00	Expansion of Existing CNG Station	$0.00	Yes
MS11068	Ryder System Inc.	7/28/2012	10/27/2018		$175,000.00	$175,000.00	New Public Access L/CNG Station (Fontana)	$0.00	Yes
MS11069	Ryder System Inc.	7/28/2012	8/27/2018		$175,000.00	$175,000.00	New Public Access L/CNG Station (Orange)	$0.00	Yes
MS11071	City of Torrance Transit Department	12/22/2012	1/21/2019	1/21/2020	$175,000.00	$166,250.00	New Limited Access CNG Station	$8,750.00	Yes
MS11073	Los Angeles Unified School District	9/11/2015	2/10/2022		$175,000.00	$175,000.00	Expansion of Existing CNG Station	$0.00	Yes
MS11079	Bear Valley Unified School District	2/5/2013	10/4/2019		$175,000.00	$175,000.00	New Limited Access CNG Station	$0.00	Yes

Total: 32

FY 2011-2012 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Open Contracts									
ML12014	City of Santa Ana	11/8/2013	8/7/2020		$384,000.00	$4,709.00	9 H.D. Nat. Gas & LPG Trucks, EV Charging	$379,291.00	No
ML12015	City of Fullerton	4/25/2013	11/24/2020	11/24/2021	$40,000.00	$40,000.00	HD CNG Vehicle, Expand CNG Station	$0.00	No
ML12016	City of Cathedral City	1/4/2013	10/3/2019		$60,000.00	$0.00	CNG Vehicle & Electric Vehicle Infrastructur	$60,000.00	No
ML12018	City of West Covina	10/18/2013	10/17/2020	1/17/2022	$300,000.00	$0.00	Expansion of Existing CNG Station	$300,000.00	No
ML12041	City of Anaheim Public Utilities Depa	4/4/2014	11/3/2015	11/3/2017	$68,977.00	$0.00	EV Charging Infrastructure	$68,977.00	No
ML12043	City of Hemet	6/24/2013	9/23/2019		$60,000.00	$0.00	Two Heavy-Duty Nat. Gas Vehicles	$60,000.00	No
ML12045	City of Baldwin Park DPW	2/14/2014	12/13/2020		$400,000.00	$0.00	Install New CNG Station	$400,000.00	No
ML12046	City of Irvine	8/11/2013	3/10/2021		$30,000.00	$0.00	One Heavy-Duty Nat. Gas Vehicle	$30,000.00	No
ML12048	City of La Palma	1/4/2013	11/3/2018		$20,000.00	$0.00	Two Medium-Duty LPG Vehicles	$20,000.00	No
ML12051	City of Bellflower	2/7/2014	2/6/2016	5/6/2017	$170,000.00	$0.00	EV Charging Infrastructure	$170,000.00	No
ML12057	City of Coachella	8/28/2013	8/27/2019	1/27/2022	$57,456.00	$10,375.80	Purchase One Nat. Gas H.D. Vehicle/Street	$47,080.20	No
ML12090	City of Palm Springs	10/9/2015	10/8/2021		$21,163.00	$0.00	EV Charging Infrastructure	$21,163.00	No
MS12008	Bonita Unified School District	7/12/2013	12/11/2019	4/11/2021	$175,000.00	$0.00	Construct New Limited-Acess CNG Station	$175,000.00	No
MS12011	Southern California Gas Company	6/14/2013	6/13/2019	3/13/2021	$150,000.00	$135,000.00	Construct New Public-Access CNG Station -	$15,000.00	No
MS12024	Southern California Gas Company	6/13/2013	12/12/2019	11/12/2020	$150,000.00	$135,000.00	Construct New Public-Access CNG Station -	$15,000.00	No
MS12033	Mike Diamond/Phace Management	12/22/2012	12/21/2018	6/21/2021	$500,000.00	$134,010.00	Purchase 20 Medium-Heavy Duty Vehicles	$365,990.00	No
MS12034	Ware Disposal Company, Inc.	11/2/2012	11/1/2018	11/1/2020	$133,070.00	$74,763.00	Purchase 8 Medium-Heavy Duty Vehicles	$58,307.00	No
MS12060	City of Santa Monica	4/4/2014	8/3/2017		$500,000.00	$333,734.27	Implement Westside Bikeshare Program	$166,265.73	No
MS12067	Leatherwood Construction, Inc.	11/8/2013	3/7/2017		$122,719.00	$0.00	Retrofit Six Vehicles w/DECS - Showcase III	$122,719.00	No
MS12075	CR&R Incorporated	7/27/2013	1/26/2021	1/26/2022	$100,000.00	$0.00	Expansion of Existing CNG Infrastructure	$100,000.00	No
MS12077	City of Coachella	6/14/2013	6/13/2020		$225,000.00	$0.00	Construct New CNG Station	$225,000.00	No
MS12080	City of Pasadena	11/8/2013	8/7/2020	2/7/2022	$225,000.00	$0.00	Expansion of Existing CNG Infrastructure	$225,000.00	No
MS12083	Brea Olinda Unified School District	7/30/2015	2/29/2024		$59,454.00	$0.00	Install New CNG Infrastructure	$59,454.00	No
MS12084	Airport Mobil Inc.	12/6/2013	5/5/2020		$150,000.00	$0.00	Install New CNG Infrastructure	$150,000.00	No
MS12089	Riverside County Transportation Co	10/18/2013	9/17/2015		$249,136.00	$105,747.48	Implement Rideshare Incentives Program	$143,388.52	No
MS12Hom	Mansfield Gas Equipment Systems				$296,000.00	$0.00	Home Refueling Apparatus Incentive Progra	$296,000.00	No
Total: 26									
Declined/Cancelled Contracts									
ML12038	City of Long Beach Public Works				$26,000.00	$0.00	Electric Vehicle Charging Infrastructure	$26,000.00	No
ML12040	City of Duarte Transit				$30,000.00	$0.00	One Heavy-Duty Nat. Gas Vehicle	$30,000.00	No
ML12044	County of San Bernardino Public Wo				$250,000.00	$0.00	Install New CNG Station	$250,000.00	No
ML12052	City of Whittier	3/14/2013	7/13/2019		$165,000.00	$0.00	Expansion of Existing CNG Station	$165,000.00	No
ML12053	City of Mission Viejo				$60,000.00	$0.00	EV Charging Infrastructure	$60,000.00	No
MS12007	WestAir Gases & Equipment				$100,000.00	$0.00	Construct New Limited-Acess CNG Station	$100,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS12027	C.V. Ice Company, Inc.	5/17/2013	11/16/2019		$75,000.00	$0.00	Purchase 3 Medium-Heavy Duty Vehicles	$75,000.00	No
MS12030	Complete Landscape Care, Inc.				$150,000.00	$0.00	Purchase 6 Medium-Heavy Duty Vehicles	$150,000.00	No
MS12070	Valley Music Travel/CID Entertainme				$99,000.00	$0.00	Implement Shuttle Service to Coachella Mus	$99,000.00	No
Total: 9									
Closed Contracts									
ML12013	City of Pasadena	10/19/2012	3/18/2015	9/18/2015	$200,000.00	$65,065.00	Electric Vehicle Charging Infrastructure	$134,935.00	Yes
ML12019	City of Palm Springs	9/6/2013	7/5/2015		$38,000.00	$16,837.00	EV Charging Infrastructure	$21,163.00	Yes
ML12021	City of Rancho Cucamonga	9/14/2012	1/13/2020		$40,000.00	$40,000.00	Four Medium-Duty Nat. Gas Vehicles	$0.00	Yes
ML12023	County of Los Angeles Internal Servi	8/1/2013	2/28/2015		$250,000.00	$192,333.00	EV Charging Infrastructure	$57,667.00	Yes
ML12037	Coachella Valley Association of Gov	3/14/2013	3/13/2014		$250,000.00	$250,000.00	Street Sweeping Operations	$0.00	Yes
ML12049	City of Rialto Public Works	7/14/2014	9/13/2015		$30,432.00	$3,265.29	EV Charging Infrastructure	$27,166.71	Yes
ML12050	City of Baldwin Park	4/25/2013	4/24/2014	10/24/2014	$402,400.00	$385,363.00	EV Charging Infrastructure	$17,037.00	Yes
ML12054	City of Palm Desert	9/30/2013	2/28/2015		$77,385.00	$77,385.00	EV Charging Infrastructure	$0.00	Yes
ML12056	City of Cathedral City	3/26/2013	5/25/2014		$25,000.00	$25,000.00	Regional Street Sweeping Program	$0.00	Yes
ML12066	City of Manhattan Beach	1/7/2014	4/6/2015		$5,900.00	$5,900.00	Electric Vehicle Charging Infrastructure	$0.00	Yes
MS12001	Los Angeles County MTA	7/1/2012	4/30/2013		$300,000.00	$211,170.00	Clean Fuel Transit Service to Dodger Stadiu	$88,830.00	Yes
MS12002	Orange County Transportation Autho	9/7/2012	4/30/2013		$342,340.00	$333,185.13	Express Bus Service to Orange County Fair	$9,154.87	Yes
MS12003	Orange County Transportation Autho	7/20/2012	2/28/2013		$234,669.00	$167,665.12	Implement Metrolink Service to Angel Stadiu	$67,003.88	Yes
MS12005	USA Waste of California, Inc.	10/19/2012	8/18/2013		$75,000.00	$75,000.00	Vehicle Maintenance Facility Modifications	$0.00	Yes
MS12006	Waste Management Collection & Re	10/19/2012	8/18/2013		$75,000.00	$75,000.00	Vehicle Maintenance Facility Modifications	$0.00	Yes
MS12012	Rim of the World Unified School Dist	12/20/2012	5/19/2014		$75,000.00	$75,000.00	Vehicle Maintenance Facility Modifications	$0.00	Yes
MS12059	Orange County Transportation Autho	2/28/2013	12/27/2014		$75,000.00	$75,000.00	Maintenance Facilities Modifications	$0.00	Yes
MS12061	Orange County Transportation Autho	3/14/2014	3/13/2017		$224,000.00	$114,240.00	Transit-Oriented Bicycle Sharing Program	$109,760.00	Yes
MS12062	Fraser Communications	12/7/2012	5/31/2014		$998,669.00	$989,218.49	Develop & Implement "Rideshare Thursday"	$9,450.51	Yes
MS12064	Anaheim Transportation Network	3/26/2013	12/31/2014		$127,296.00	$56,443.92	Implement Anaheim Circulator Service	$70,852.08	Yes
MS12065	Orange County Transportation Autho	7/27/2013	11/30/2013		$43,933.00	$14,832.93	Ducks Express Service to Honda Center	$29,100.07	Yes
MS12068	Southern California Regional Rail Au	3/1/2013	9/30/2013		$57,363.00	$47,587.10	Implement Metrolink Service to Autoclub Sp	$9,775.90	Yes
MS12069	City of Irvine	8/11/2013	2/28/2014		$45,000.00	$26,649.41	Implement Special Transit Service to Solar	$18,350.59	Yes
MS12076	City of Ontario, Housing & Municipal	3/8/2013	4/7/2015		$75,000.00	$75,000.00	Maintenance Facilities Modification	$0.00	Yes
MS12078	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		$75,000.00	$73,107.00	Maintenance Facility Modifications - Vernon	$1,893.00	Yes
MS12081	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		$75,000.00	$75,000.00	Maintenance Facility Modifications - Santa A	$0.00	Yes
MS12085	Bear Valley Unified School District	4/25/2013	6/24/2014		$75,000.00	$75,000.00	Maintenance Facility Modifications	$0.00	Yes
MS12087	Los Angeles County MTA	8/29/2013	11/28/2015		$125,000.00	$125,000.00	Implement Rideshare Incentives Program	$0.00	Yes
MS12088	Orange County Transportation Autho	12/6/2013	3/5/2016		$125,000.00	$18,496.50	Implement Rideshare Incentives Program	$106,503.50	Yes
Total: 29									
Closed/Incomplete Contracts									
MS12079	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		$75,000.00	$0.00	Maintenance Facility Modifications - Boyle H	$75,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Total: 1									
Open/Complete Contracts									
ML12017	City of Los Angeles, Bureau of Sanit	6/26/2013	5/25/2020	11/25/2021	$950,000.00	$950,000.00	32 H.D. Nat. Gas Vehicles	$0.00	No
ML12020	City of Los Angeles, Department of	9/27/2012	3/26/2019	3/26/2020	$450,000.00	$450,000.00	15 H.D. Nat. Gas Vehicles	$0.00	Yes
ML12022	City of La Puente	12/6/2013	6/5/2020		$110,000.00	$110,000.00	2 Medium-Duty and Three Heavy-Duty CNG	$0.00	Yes
ML12039	City of Redlands	2/8/2013	10/7/2019		$90,000.00	$90,000.00	Three Heavy-Duty Nat. Gas Vehicles	$0.00	Yes
ML12042	City of Chino Hills	1/18/2013	3/17/2017		$87,500.00	$87,500.00	Expansion of Existing CNG Station	$0.00	Yes
ML12047	City of Orange	2/1/2013	1/31/2019		$30,000.00	$30,000.00	One Heavy-Duty Nat. Gas Vehicle	$0.00	Yes
ML12055	City of Manhattan Beach	3/1/2013	12/31/2018		$10,000.00	$10,000.00	One Medium-Duty Nat. Gas Vehicle	$0.00	Yes
MS12004	USA Waste of California, Inc.	10/24/2013	11/23/2019		$175,000.00	$175,000.00	Construct New Limited-Access CNG Station	$0.00	Yes
MS12009	Sysco Food Services of Los Angeles	1/7/2014	4/6/2020		$150,000.00	$150,000.00	Construct New Public-Access LNG Station	$0.00	Yes
MS12010	Murrieta Valley Unified School Distric	4/5/2013	9/4/2019		$242,786.00	$242,786.00	Construct New Limited-Access CNG Station	$0.00	Yes
MS12025	Silverado Stages, Inc.	11/2/2012	7/1/2018		$150,000.00	$150,000.00	Purchase Six Medium-Heavy Duty Vehicles	$0.00	Yes
MS12026	U-Haul Company of California	3/14/2013	3/13/2019		$500,000.00	$353,048.26	Purchase 23 Medium-Heavy Duty Vehicles	$146,951.74	Yes
MS12028	Dy-Dee Service of Pasadena, Inc.	12/22/2012	1/21/2019		$45,000.00	$40,000.00	Purchase 2 Medium-Duty and 1 Medium-He	$5,000.00	Yes
MS12029	Community Action Partnership of Or	11/2/2012	11/1/2018		$25,000.00	$14,850.00	Purchase 1 Medium-Heavy Duty Vehicle	$10,150.00	Yes
MS12031	Final Assembly, Inc.	11/2/2012	11/1/2018		$50,000.00	$32,446.00	Purchase 2 Medium-Heavy Duty Vehicles	$17,554.00	Yes
MS12032	Fox Transportation	12/14/2012	12/13/2018		$500,000.00	$500,000.00	Purchase 20 Medium-Heavy Duty Vehicles	$0.00	Yes
MS12035	Disneyland Resort	1/4/2013	7/3/2019		$25,000.00	$18,900.00	Purchase 1 Medium-Heavy Duty Vehicle	$6,100.00	Yes
MS12036	Jim & Doug Carter's Automotive/VS	1/4/2013	11/3/2018		$50,000.00	$50,000.00	Purchase 2 Medium-Heavy Duty Vehicles	$0.00	Yes
MS12058	Krisda Inc	4/24/2013	1/23/2019		$25,000.00	$25,000.00	Repower One Heavy-Duty Off-Road Vehicle	$0.00	Yes
MS12063	Custom Alloy Light Metals, Inc.	8/16/2013	2/15/2020		$100,000.00	$100,000.00	Install New Limited Access CNG Station	$0.00	Yes
MS12071	Transit Systems Unlimited, Inc.	5/17/2013	12/16/2018		$21,250.00	$21,250.00	Expansion of Existing CNG Station	$0.00	Yes
MS12072	99 Cents Only Stores	4/5/2013	9/4/2019		$100,000.00	$100,000.00	Construct New CNG Station	$0.00	Yes
MS12073	FirstCNG, LLC	7/27/2013	12/26/2019		$150,000.00	$150,000.00	Construct New CNG Station	$0.00	Yes
MS12074	Arcadia Unified School District	7/5/2013	9/4/2019		$175,000.00	$175,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
MS12082	City of Los Angeles, Bureau of Sanit	11/20/2013	2/19/2021		$175,000.00	$175,000.00	Install New CNG Infrastructure	$0.00	Yes
MS12086	SuperShuttle International, Inc.	3/26/2013	3/25/2019		$225,000.00	$225,000.00	Purchase 23 Medium-Heavy Duty Vehicles	$0.00	Yes
Total: 26									

FY 2012-2014 Contracts

Open Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML14012	City of Santa Ana	2/13/2015	10/12/2021		$244,000.00	$0.00	EV Charging and 7 H.D. LPG Vehicles	$244,000.00	No
ML14013	City of Los Angeles, Bureau of Sanit	10/7/2016	2/6/2025		$400,000.00	$0.00	Purchase 14 H.D. Nat. Gas Vehicles	$400,000.00	No
ML14014	City of Torrance	9/5/2014	12/4/2019		$56,000.00	$0.00	EV Charging Infrastructure	$56,000.00	No
ML14016	City of Anaheim	4/3/2015	9/2/2021		$380,000.00	$0.00	Purchase 2 H.D. Vehicles, Expansion of Exi	$380,000.00	No
ML14018	City of Los Angeles, Department of	3/6/2015	9/5/2021	12/5/2022	$810,000.00	$720,000.00	Purchase 27 H.D. Nat. Gas Vehicles	$90,000.00	No
ML14019	City of Corona Public Works	12/5/2014	6/4/2020	6/4/2022	$178,263.00	$0.00	EV Charging, Bicycle Racks, Bicycle Locker	$178,263.00	No
ML14021	Riverside County Regional Park and	7/24/2014	12/23/2016	9/23/2018	$250,000.00	$0.00	Bicycle Trail Improvements	$250,000.00	No
ML14022	County of Los Angeles Department o	10/2/2015	5/1/2022		$270,000.00	$0.00	Purchase 9 H.D. Nat. Gas Vehicles	$270,000.00	No
ML14023	County of Los Angeles Department o	10/2/2015	9/1/2017		$230,000.00	$0.00	Maintenance Fac. Modifications-Westcheste	$230,000.00	No
ML14024	County of Los Angeles Department o	10/2/2015	9/1/2017		$230,000.00	$0.00	Maintenance Fac. Modifications-Baldwin Par	$230,000.00	No
ML14025	County of Los Angeles Dept of Publi	10/2/2015	7/1/2018		$300,000.00	$0.00	Construct New CNG Station in Malibu	$300,000.00	No
ML14026	County of Los Angeles Dept of Publi	10/2/2015	5/1/2023		$300,000.00	$0.00	Construct New CNG Station in Castaic	$300,000.00	No
ML14027	County of Los Angeles Dept of Publi	10/2/2015	5/1/2023		$500,000.00	$0.00	Construct New CNG Station in Canyon Coun	$500,000.00	No
ML14028	City of Fullerton	9/5/2014	1/4/2022		$126,950.00	$0.00	Expansion of Exisiting CNG Infrastructure	$126,950.00	No
ML14030	County of Los Angeles Internal Servi	1/9/2015	3/8/2018	6/8/2019	$425,000.00	$0.00	Bicycle Racks, Outreach & Education	$425,000.00	No
ML14033	City of Irvine	7/11/2014	2/10/2021		$60,000.00	$0.00	Purchase 2 H.D. CNG Vehicles	$60,000.00	No
ML14049	City of Moreno Valley	7/11/2014	3/10/2021		$105,000.00	$30,000.00	One HD Nat Gas Vehicle, EV Charging, Bicy	$75,000.00	No
ML14050	City of Yucaipa	7/11/2014	9/10/2015	7/1/2016	$84,795.00	$0.00	Installation of Bicycle Lanes	$84,795.00	No
ML14051	City of Brea	9/5/2014	1/4/2017	7/4/2018	$450,000.00	$0.00	Installation of Bicycle Trail	$450,000.00	No
ML14054	City of Torrance	11/14/2014	4/13/2017	7/13/2017	$350,000.00	$0.00	Upgrade Maintenance Facility	$350,000.00	No
ML14055	City of Highland	10/10/2014	3/9/2018		$500,000.00	$0.00	Bicycle Lanes and Outreach	$500,000.00	No
ML14056	City of Redlands	9/5/2014	5/4/2016	5/4/2018	$125,000.00	$0.00	Bicycle Lanes	$125,000.00	No
ML14061	City of La Habra	3/11/2016	3/10/2022		$41,600.00	$0.00	Purchase Two Heavy-Duty Nat. Gas Vehicle	$41,600.00	No
ML14062	City of San Fernando	3/27/2015	5/26/2021		$387,091.00	$0.00	Expand Existing CNG Fueling Station	$387,091.00	No
ML14066	City of South Pasadena	9/12/2014	7/11/2016	7/11/2017	$142,096.00	$0.00	Bicycle Trail Improvements	$142,096.00	No
ML14067	City of Duarte Transit	12/4/2015	1/3/2023		$60,000.00	$0.00	Purchase Two Heavy-Duty Nat. Gas Vehicle	$60,000.00	No
ML14068	City of South Pasadena	9/12/2014	10/11/2015	1/11/2020	$10,183.00	$0.00	Electric Vehicle Charging Infrastructure	$10,183.00	No
ML14070	City of Rancho Cucamonga	9/3/2016	12/2/2018		$365,245.00	$0.00	Bicycle Trail Improvements	$365,245.00	No
ML14071	City of Manhattan Beach	1/9/2015	11/8/2018		$22,485.00	$0.00	Electric Vehicle Charging Infrastructure	$22,485.00	No
ML14072	City of Cathedral City	8/13/2014	1/12/2021		$136,000.00	$0.00	Medium & H.D. Vehicles, EV Charging, Bike	$136,000.00	No
ML14093	County of Los Angeles Dept of Publi	8/14/2015	1/13/2019		$150,000.00	$0.00	San Gabriel BikeTrail Underpass Improveme	$150,000.00	No
MS14001	Los Angeles County MTA	3/6/2015	4/30/2015		$1,216,637.00	$0.00	Clean Fuel Transit Service to Dodger Stadiu	$1,216,637.00	No
MS14053	Upland Unified School District	1/9/2015	7/8/2021		$175,000.00	$166,250.00	Expansion of Existing CNG Infrastructure	$8,750.00	No
MS14057	Los Angeles County MTA	11/7/2014	10/6/2019		$1,250,000.00	$0.00	Implement Various Signal Synchronization P	$1,250,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS14058	Orange County Transportation Autho	11/7/2014	4/6/2016	4/6/2017	$1,250,000.00	$0.00	Implement Various Signal Synchronization P	$1,250,000.00	No
MS14059	Riverside County Transportation Co	9/5/2014	3/4/2018		$1,250,000.00	$0.00	Implement Various Signal Synchronization P	$1,250,000.00	No
MS14072	San Bernardino County Transportatio	3/27/2015	3/26/2018		$1,250,000.00	$0.00	Implement Various Signal Synchronization P	$1,250,000.00	No
MS14073	Anaheim Transportation Network	1/9/2015	4/30/2017		$221,312.00	$217,811.50	Anaheim Resort Circulator Service	$3,500.50	No
MS14075	Fullerton Joint Union High School Di	7/22/2016	11/21/2023		$300,000.00	$0.00	Expansion of Existing CNG Infrastructure/Ma	$300,000.00	No
MS14076	Rialto Unified School District	6/17/2015	2/16/2022		$225,000.00	$0.00	New Public Access CNG Station	$225,000.00	No
MS14077	County Sanitation Districts of L.A. Co	3/6/2015	5/5/2021		$175,000.00	$175,000.00	New Limited Access CNG Station	$0.00	No
MS14078	American Honda Motor Co., Inc.	9/4/2015	8/3/2022		$150,000.00	$0.00	New Public Access CNG Station	$150,000.00	No
MS14079	Waste Resources, Inc.	9/14/2016	8/13/2022		$100,000.00	$0.00	New Limited Access CNG Station	$100,000.00	No
MS14080	CR&R Incorporated	6/1/2015	8/31/2021	8/31/2022	$200,000.00	$0.00	Expansion of Existing CNG Infrastructure/Ma	$200,000.00	No
MS14081	CR&R Incorporated	6/1/2015	5/30/2021		$175,000.00	$90,000.00	Expansion of Existing CNG Infrastructure/Ma	$85,000.00	No
MS14082	Grand Central Recycling & Transfer	12/4/2015	3/3/2023		$150,000.00	$0.00	Expansion of Existing CNG Infrastructure	$150,000.00	No
MS14083	Hacienda La Puente Unified School	7/10/2015	3/9/2022		$175,000.00	$0.00	New Limited Access CNG Station	$175,000.00	No
MS14089	Top Shelf Consulting, LLC	2/5/2015	8/4/2016	12/31/2016	$200,000.00	$200,000.00	Enhanced Fleet Modernization Program	$0.00	Yes
MS14092	West Covina Unified School District	9/3/2016	12/2/2022		$124,000.00	$0.00	Expansion of Existing CNG Infrastructure	$124,000.00	No
Total: 49									
Pending Execution Contracts									
ML14060	County of Los Angeles Internal Servi				$104,400.00	$0.00	Electric Vehicle Charging Infrastructure	$104,400.00	No
ML14069	City of Beaumont				$200,000.00	$0.00	Construct New CNG Infrastructure	$200,000.00	No
MS14037	Penske Truck Leasing Co., L.P.				$75,000.00	$0.00	Vehicle Maint. Fac. Modifications - Carson	$75,000.00	No
MS14038	Penske Truck Leasing Co., L.P.				$75,000.00	$0.00	Vehicle Maint. Fac. Modifications - Fontana	$75,000.00	No
MS14085	Prologis, L.P.				$100,000.00	$0.00	New Limited Access CNG Station	$100,000.00	No
MS14086	San Gabriel Valley Towing I				$150,000.00	$0.00	New Public Access CNG Station	$150,000.00	No
Total: 6									
Declined/Cancelled Contracts									
ML14063	City of Hawthorne				$32,000.00	$0.00	Expansion of Existng CNG Infrastructure	$32,000.00	No
MS14035	Penske Truck Leasing Co., L.P.				$75,000.00	$0.00	Vehicle Maint. Fac. Modifications - Sun Valle	$75,000.00	No
MS14036	Penske Truck Leasing Co., L.P.				$75,000.00	$0.00	Vehicle Maint. Fac. Modifications - La Mirad	$75,000.00	No
MS14043	City of Anaheim				$175,000.00	$0.00	Expansion of Existing CNG Station	$175,000.00	No
MS14091	Serv-Wel Disposal				$100,000.00	$0.00	New Limited-Access CNG Infrastructure	$100,000.00	No
Total: 5									
Closed Contracts									
ML14010	City of Cathedral City	8/13/2014	10/12/2015		$25,000.00	$25,000.00	Street Sweeping Operations	$0.00	Yes
ML14011	City of Palm Springs	6/13/2014	1/12/2016		$79,000.00	$78,627.00	Bicycle Racks, Bicycle Outreach & Educatio	$373.00	Yes
ML14015	Coachella Valley Association of Gov	6/6/2014	9/5/2015		$250,000.00	$250,000.00	Street Sweeping Operations	$0.00	Yes
ML14020	County of Los Angeles Dept of Publi	8/13/2014	1/12/2018		$150,000.00	$0.00	San Gabriel BikeTrail Underpass Improveme	$150,000.00	No
ML14065	City of Orange	9/5/2014	8/4/2015		$10,000.00	$10,000.00	Electric Vehicle Charging Infrastructure	$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS14002	Orange County Transportation Autho	9/6/2013	4/30/2014		$576,833.00	$576,833.00	Clean Fuel Transit Service to Orange Count	$0.00	Yes
MS14003	Orange County Transportation Autho	8/1/2013	4/30/2014	10/30/2014	$194,235.00	$184,523.00	Implement Metrolink Service to Angel Stadiu	$9,712.00	Yes
MS14004	Orange County Transportation Autho	9/24/2013	4/30/2014		$36,800.00	$35,485.23	Implement Express Bus Service to Solar De	$1,314.77	Yes
MS14005	Transit Systems Unlimited, Inc.	4/11/2014	2/28/2016		$515,200.00	$511,520.00	Provide Expanded Shuttle Service to Hollyw	$3,680.00	Yes
MS14007	Orange County Transportation Autho	6/6/2014	4/30/2015		$208,520.00	$189,622.94	Implement Special Metrolink Service to Ang	$18,897.06	Yes
MS14008	Orange County Transportation Autho	8/13/2014	5/31/2015		$601,187.00	$601,187.00	Implement Clean Fuel Bus Service to Orang	$0.00	Yes
MS14009	A-Z Bus Sales, Inc.	1/17/2014	12/31/2014	3/31/2015	$388,000.00	$388,000.00	Alternative Fuel School Bus Incentive Progra	$0.00	Yes
MS14039	Waste Management Collection and	7/10/2015	4/9/2016		$75,000.00	$75,000.00	Vehicle Maint. Fac. Modifications - Irvine	$0.00	Yes
MS14040	Waste Management Collection and	7/10/2015	4/9/2016		$75,000.00	$75,000.00	Vehicle Maint. Fac. Modifications - Santa An	$0.00	No
MS14047	Southern California Regional Rail Au	3/7/2014	9/30/2014		$49,203.00	$32,067.04	Special Metrolink Service to Autoclub Speed	$17,135.96	Yes
MS14048	BusWest	3/14/2014	12/31/2014	5/31/2015	$940,850.00	$847,850.00	Alternative Fuel School Bus Incentive Progra	$93,000.00	Yes
MS14087	Orange County Transportation Autho	8/14/2015	4/30/2016		$239,645.00	$195,377.88	Implement Special Metrolink Service to Ang	$44,267.12	Yes
MS14088	Southern California Regional Rail Au	5/7/2015	9/30/2015		$79,660.00	$66,351.44	Special Metrolink Service to Autoclub Speed	$13,308.56	Yes
Total: 18									
Open/Complete Contracts									
ML14029	City of Irvine	7/11/2014	6/10/2017		$90,500.00	$71,056.78	Bicycle Trail Improvements	$19,443.22	No
ML14031	Riverside County Waste Manageme	6/13/2014	12/12/2020		$90,000.00	$90,000.00	Purchase 3 H.D. CNG Vehicles	$0.00	No
ML14032	City of Rancho Cucamonga	1/9/2015	1/8/2022		$113,990.00	$104,350.63	Expansion of Existing CNG Infras., Bicycle L	$9,639.37	Yes
ML14034	City of Lake Elsinore	9/5/2014	5/4/2021		$56,700.00	$56,700.00	EV Charging Stations	$0.00	No
ML14064	City of Claremont	7/11/2014	7/10/2020	1/10/2021	$60,000.00	$60,000.00	Purchase Two Heavy-Duty Nat. Gas Vehicle	$0.00	No
MS14041	USA Waste of California, Inc.	9/4/2015	10/3/2021		$175,000.00	$175,000.00	Limited-Access CNG Station, Vehicle Maint.	$0.00	Yes
MS14042	Grand Central Recycling & Transfer	6/6/2014	9/5/2021		$150,000.00	$150,000.00	Expansion of Existing CNG Station	$0.00	Yes
MS14044	TIMCO CNG Fund I, LLC	5/2/2014	11/1/2020		$150,000.00	$150,000.00	New Public-Access CNG Station in Santa A	$0.00	Yes
MS14045	TIMCO CNG Fund I, LLC	6/6/2014	12/5/2020		$150,000.00	$150,000.00	New Public-Access CNG Station in Inglewoo	$0.00	Yes
MS14046	Ontario CNG Station Inc.	5/15/2014	5/14/2020	11/14/2021	$150,000.00	$150,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
MS14052	Arcadia Unified School District	6/13/2014	10/12/2020		$78,000.00	$78,000.00	Expansion of an Existing CNG Fueling Statio	$0.00	Yes
MS14074	Midway City Sanitary District	1/9/2015	3/8/2021		$250,000.00	$250,000.00	Limited-Access CNG Station & Facility Modif	$0.00	Yes
MS14084	US Air Conditioning Distributors	5/7/2015	9/6/2021		$100,000.00	$100,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
MS14090	City of Monterey Park	5/7/2015	5/6/2021		$225,000.00	$225,000.00	Expansion of Existing CNG Infrastructure	$0.00	Yes
Total: 14									

FY 2014-2016 Contracts

Open Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML16005	City of Palm Springs	3/4/2016	10/3/2017		$40,000.00	$0.00	Install Bicycle Racks, and Implement Bicycl	$40,000.00	No
ML16006	City of Cathedral City	4/27/2016	4/26/2022		$55,000.00	$0.00	Purchase 1 H.D. Nat. Gas Vehicle, Bicycle	$55,000.00	No
ML16007	City of Culver City Transportation De	10/6/2015	4/5/2023		$246,000.00	$0.00	Purchase 7 H.D. Nat. Gas Vehicles, EV Cha	$246,000.00	No
ML16008	City of Pomona	9/20/2016	11/19/2022		$310,000.00	$0.00	Purchase 4 Medium-Duty and 9 Heavy-Duty	$310,000.00	No
ML16009	City of Fountain Valley	10/6/2015	2/5/2018		$46,100.00	$0.00	Install EV Charging Infrastructure	$46,100.00	No
ML16010	City of Fullerton	10/7/2016	4/6/2023		$370,500.00	$0.00	Expand Existing CNG Station, EV Charging I	$370,500.00	No
ML16011	City of Claremont	10/6/2015	6/5/2022		$90,000.00	$0.00	Purchase 3 Heavy-Duty Nat. Gas Vehicles	$90,000.00	No
ML16012	City of Carson	1/15/2016	10/14/2022		$60,000.00	$0.00	Purchase 2 Heavy-Duty Nat. Gas Vehicles	$60,000.00	No
ML16013	City of Monterey Park	12/4/2015	7/3/2022		$90,000.00	$0.00	Purchase 3 Heavy-Duty Nat. Gas Vehicles	$90,000.00	No
ML16015	City of Yorba Linda	3/4/2016	11/3/2017		$85,000.00	$0.00	Install Bicycle Lanes	$85,000.00	No
ML16016	City of Los Angeles, Department of	2/5/2016	12/4/2022		$630,000.00	$0.00	Purchase 21 Heavy-Duty Nat. Gas Vehicles	$630,000.00	No
ML16017	City of Long Beach	2/5/2016	8/4/2023		$1,445,400.00	$99,642.73	Purchase 48 Medium-Duty, 16 H.D. Nat. Ga	$1,345,757.27	No
ML16018	City of Hermosa Beach	10/7/2016	1/6/2023		$29,520.00	$0.00	Purchase 2 M.D. Nat. Gas Vehicles, Bicycle	$29,520.00	No
ML16020	City of Pomona	4/1/2016	2/1/2018		$440,000.00	$0.00	Install Road Surface Bicycle Detection Syste	$440,000.00	No
ML16021	City of Santa Clarita	10/7/2016	6/6/2024		$49,400.00	$0.00	Install EV Charging Infrastructure	$49,400.00	No
ML16023	City of Banning	12/11/2015	12/10/2021		$30,000.00	$0.00	Purchase 1 H.D. Nat. Gas Vehicle	$30,000.00	No
ML16024	City of Azusa	4/27/2016	2/26/2022		$30,000.00	$0.00	Purchase 1 H.D. Nat. Gas Vehicle	$30,000.00	No
ML16025	City of South Pasadena	6/22/2016	4/21/2023		$180,535.00	$0.00	Purchase 2 H.D. Nat. Gas Vehicles, Expand	$180,535.00	No
ML16026	City of Downey	5/6/2016	9/5/2017		$40,000.00	$0.00	Install EV Charging Infrastructure	$40,000.00	No
ML16027	City of Whittier	1/8/2016	11/7/2022		$30,000.00	$30,000.00	Purchase 1 H.D. Nat. Gas Vehicle	$0.00	No
ML16028	City of Azusa	9/9/2016	4/8/2018		$25,000.00	$0.00	Enhance Existing Class 1 Bikeway	$25,000.00	No
ML16031	City of Cathedral City	12/19/2015	2/18/2017		$25,000.00	$0.00	Street Sweeping in Coachella Valley	$25,000.00	No
ML16032	City of Azusa	9/9/2016	4/8/2019		$474,925.00	$0.00	Implement a "Complete Streets" Pedestrian	$474,925.00	No
ML16033	Coachella Valley Association of Gov	4/27/2016	4/26/2018		$250,000.00	$0.00	Street Sweeping Operations in Coachella Va	$250,000.00	No
ML16034	City of Riverside	3/11/2016	10/10/2018		$500,000.00	$0.00	Implement a "Complete Streets" Pedestrian	$500,000.00	No
ML16035	City of Wildomar	4/1/2016	11/1/2017		$500,000.00	$0.00	Install Bicycle Lanes	$500,000.00	No
ML16036	City of Brea	3/4/2016	12/3/2018		$500,000.00	$0.00	Install a Class 1 Bikeway	$500,000.00	No
ML16037	City of Rancho Cucamonga	2/5/2016	11/4/2022		$30,000.00	$0.00	Purchase One Heavy-Duty Natural Gas Vehi	$30,000.00	No
ML16038	City of Palm Springs	4/1/2016	7/31/2022		$230,000.00	$0.00	Install Bicycle Lanes & Purchase 4 Heavy-D	$230,000.00	No
ML16039	City of Torrance Transit Department	1/6/2017	9/5/2022		$32,000.00	$0.00	Install EV Charging Infrastructure	$32,000.00	No
ML16040	City of Eastvale	1/6/2017	7/5/2022		$110,000.00	$0.00	Install EV Charging Infrastructure	$110,000.00	No
ML16041	City of Moreno Valley	9/3/2016	1/21/2021		$20,000.00	$0.00	Install EV Charging Infrastructure	$20,000.00	No
ML16042	City of San Dimas	4/1/2016	12/31/2019		$55,000.00	$0.00	Install EV Charging Infrastructure	$55,000.00	No
ML16045	City of Anaheim	6/22/2016	8/21/2019		$275,000.00	$0.00	Maintenance Facility Modifications	$275,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML16046	City of El Monte	4/1/2016	5/31/2021		$20,160.00	$0.00	Install EV Charging Infrastructure	$20,160.00	No
ML16047	City of Fontana	1/6/2017	8/5/2019		$500,000.00	$0.00	Enhance an Existing Class 1 Bikeway	$500,000.00	No
ML16048	City of Placentia	3/26/2016	5/25/2021	6/25/2022	$90,000.00	$18,655.00	Install a Bicycle Locker and EV Charging Infr	$71,345.00	No
ML16049	City of Buena Park	4/1/2016	11/30/2018		$429,262.00	$0.00	Installation of a Class 1 Bikeway	$429,262.00	No
ML16050	City of Westminster	5/6/2016	7/5/2020		$115,000.00	$0.00	Installation of EV Charging Infrastructure	$115,000.00	No
ML16051	City of South Pasadena	2/12/2016	1/11/2017	12/11/2017	$320,000.00	$0.00	Implement "Open Streets" Event with Variou	$320,000.00	No
ML16052	City of Rancho Cucamonga	9/3/2016	11/2/2019		$315,576.00	$0.00	Install Two Class 1 Bikeways	$315,576.00	No
ML16053	City of Claremont	3/11/2016	7/10/2018		$498,750.00	$0.00	Implement a "Complete Streets" Pedestrian	$498,750.00	No
ML16054	City of Yucaipa	3/26/2016	7/26/2018		$120,000.00	$0.00	Implement a "Complete Streets" Pedestrian	$120,000.00	No
ML16055	City of Ontario	5/6/2016	5/5/2022		$270,000.00	$0.00	Purchase Nine Heavy-Duty Natural-Gas Veh	$270,000.00	No
ML16056	City of Ontario	3/23/2016	9/22/2020		$150,000.00	$0.00	Expansion of an Existing CNG Station	$150,000.00	No
ML16057	City of Yucaipa	4/27/2016	1/26/2019		$380,000.00	$0.00	Implement a "Complete Streets" Pedestrian	$380,000.00	No
ML16058	Los Angeles County Department of P	10/7/2016	4/6/2024		$491,898.00	$0.00	Purchase 15 H.D. Nat. Gas Vehicles and Ins	$491,898.00	No
ML16059	City of Burbank	4/1/2016	2/28/2022		$180,000.00	$0.00	Purchase 6 H.D. Nat. Gas Vehicles	$180,000.00	No
ML16060	City of Cudahy	2/5/2016	10/4/2017		$73,910.00	$0.00	Implement an "Open Streets" Event	$73,910.00	No
ML16062	City of Colton, Electric Department	6/3/2016	7/2/2020		$25,000.00	$0.00	Installation of EV Charging Infrastructure	$25,000.00	No
ML16068	Riverside County Dept of Public Heal	12/2/2016	8/1/2018		$171,648.00	$0.00	Implement an "Open Streets" Events with V	$171,648.00	No
ML16072	City of Palm Desert	3/4/2016	1/3/2020		$56,000.00	$0.00	Installation of EV Charging Infrastructure	$56,000.00	No
ML16074	City of La Verne	7/22/2016	1/21/2023		$365,000.00	$0.00	Install CNG Fueling Station	$365,000.00	No
ML16075	City of San Fernando	10/27/2016	2/26/2019		$354,000.00	$0.00	Install a Class 1 Bikeway	$354,000.00	No
ML16078	City of Moreno Valley	5/6/2016	11/5/2017		$32,800.00	$0.00	Install Bicycle Infrastructure & Implement Bi	$32,800.00	No
ML16079	City of Yucaipa	4/1/2016	3/31/2020		$5,000.00	$5,000.00	Purchase Electric Lawnmower	$0.00	No
ML16083	City of El Monte	4/1/2016	4/30/2021		$57,210.00	$0.00	Install EV Charging Infrastructure	$57,210.00	No
MS16001	Los Angeles County MTA	4/1/2016	4/30/2017		$1,350,000.00	$0.00	Clean Fuel Transit Service to Dodger Stadiu	$1,350,000.00	No
MS16004	Mineral LLC	9/4/2015	7/3/2017		$25,890.00	$6,000.00	Design, Develop, Host and Maintain MSRC	$19,890.00	No
MS16030	The Better World Group	12/19/2015	12/31/2017		$120,000.00	$67,425.44	Programmic Outreach Services to the MSR	$52,574.56	No
MS16082	Riverside County Transportation Co	9/3/2016	8/2/2018	6/2/2018	$590,759.00	$0.00	Extended Freeway Service Patrols	$590,759.00	No
MS16084	Transit Systems Unlimited, Inc.	5/6/2016	2/28/2018		$565,600.00	$215,130.00	Implement Special Shuttle Service from Uni	$350,470.00	No
MS16086	San Bernardino County Transportatio	9/3/2016	10/2/2021		$800,625.00	$0.00	Freeway Service Patrols	$800,625.00	No
MS16087	Burrtec Waste & Recycling Services,	7/8/2016	3/7/2023		$100,000.00	$0.00	Construct New Limited-Access CNG Station	$100,000.00	No
MS16089	Orange County Transportation Autho	7/8/2016	4/30/2017		$128,500.00	$0.00	Implement Special Bus Service to Angel Sta	$128,500.00	No
MS16090	Los Angeles County MTA	10/27/2016	4/26/2020		$2,500,000.00	$0.00	Expansion of the Willowbrook/Rosa Parks Tr	$2,500,000.00	No
MS16091	San Bernardino County Transportatio	10/7/2016	11/6/2018		$1,000,000.00	$0.00	Traffic Signal Synchronization Projects	$1,000,000.00	No
MS16093	Orange County Transportation Autho	9/3/2016	3/2/2018		$1,553,657.00	$0.00	Implement a Mobile Ticketing System	$1,553,657.00	No
MS16095	Orange County Transportation Autho	7/22/2016	5/31/2017		$694,645.00	$0.00	Implement Special Bus Service to Orange C	$694,645.00	No
MS16096	San Bernardino County Transportatio	10/27/2016	12/26/2019		$450,000.00	$0.00	EV Charging Infrastructure	$450,000.00	No
MS16097	Walnut Valley Unified School District	10/7/2016	11/6/2022		$250,000.00	$0.00	Expand CNG Station & Modify Maintenance	$250,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Total: 71									
Pending Execution Contracts									
ML16014	City of Dana Point				$153,818.00	$0.00	Extend an Existing Class 1 Bikeway	$153,818.00	No
ML16019	City of Los Angeles, Dept of General				$102,955.00	$0.00	Install EV Charging Infrastructure	$102,955.00	No
ML16022	Los Angeles Department of Water an				$390,000.00	$0.00	Purchase 13 H.D. Nat. Gas Vehicles	$390,000.00	No
ML16064	County of Orange, OC Parks				$204,073.00	$0.00	Implement "Open Streets" Events with Vario	$204,073.00	No
ML16065	City of Temple City				$500,000.00	$0.00	Implement a "Complete Streets" Pedestrian	$500,000.00	No
ML16066	City of Long Beach Public Works				$75,050.00	$0.00	Implement an "Open Streets" Event	$75,050.00	No
ML16067	City of South El Monte				$73,329.00	$0.00	Implement an "Open Streets" Event	$73,329.00	No
ML16069	City of West Covina				$54,199.00	$0.00	Installation of EV Charging Infrastructure	$54,199.00	No
ML16070	City of Beverly Hills				$90,000.00	$0.00	Purchase 3 H.D. Nat. Gas Vehicles	$90,000.00	No
ML16071	City of Highland				$264,500.00	$0.00	Implement a "Complete Streets" Pedestrian	$264,500.00	No
ML16073	City of Long Beach Public Works				$50,000.00	$0.00	Implement an "Open Streets" Event	$50,000.00	No
ML16076	City of San Fernando				$100,000.00	$0.00	Install EV Charging Infrastructure	$100,000.00	No
ML16077	City of Rialto				$463,216.00	$0.00	Pedestrian Access Improvements, Bicycle L	$463,216.00	No
MS16029	Orange County Transportation Autho				$851,883.00	$0.00	Transportation Control Measure Partnership	$851,883.00	No
MS16043	LBA Realty Company LLC				$100,000.00	$0.00	Install Limited-Access CNG Station	$100,000.00	No
MS16080	Riverside County Transportation Co				$1,200,000.00	$0.00	Passenger Rail Service for Coachella and St	$1,200,000.00	No
MS16088	Transit Systems Unlimited, Inc.				$17,000.00	$0.00	Expansion of Existing CNG Station	$17,000.00	No
MS16092	San Bernardino County Transportatio				$250,000.00	$0.00	Implement a Series of "Open Streets" Event	$250,000.00	No
MS16094	Riverside County Transportation Co				$1,909,241.00	$0.00	MetroLink First Mile/Last Mile Mobility Strate	$1,909,241.00	No
MS16102	Nasa Services, Inc.				$100,000.00	$0.00	Construct a Limited-Access CNG Station	$100,000.00	No
MS16103	Arrow Services, Inc.				$100,000.00	$0.00	Construct a Limited-Access CNG Station	$100,000.00	No
MS16104	City of Perris				$175,000.00	$0.00	Expansion of Existing CNG Infrastructure	$175,000.00	No
MS16105	Huntington Beach Union High School				$175,000.00	$0.00	Expansion of Existing CNG Infrastructure	$175,000.00	No
MS16106	City of Lawndale				$175,000.00	$0.00	Expansion of Existing CNG Infrastructure	$175,000.00	No
MS16107	Athens Services				$100,000.00	$0.00	Construct a Limited-Access CNG Station	$100,000.00	No
MS16108	VNG 5703 Gage Avenue, LLC				$150,000.00	$0.00	Construct Public-Access CNG Station in Bell	$150,000.00	No
MS16109	Sanitation Districts of Los Angeles C				$275,000.00	$0.00	Expansion of an Existing L/CNG Station	$275,000.00	No
MS16110	City of Riverside				$300,000.00	$0.00	Expansion of Exisiting CNG Station and Mai	$300,000.00	No
MS16111	VNG 5703 Gage Avenue, LLC				$150,000.00	$0.00	Construct Public Access CNG Station in Pla	$150,000.00	No
MS16112	Orange County Transportation Autho				$1,470,000.00	$0.00	Repower Up to 98 Transit Buses	$1,470,000.00	No
MS16113	Los Angeles County MTA				$1,875,000.00	$0.00	Repower Up to 125 Transit Buses	$1,875,000.00	No
MS16114	City of Norwalk				$45,000.00	$0.00	Repower Up to 3 Transit Buses	$45,000.00	No
MS16115	City of Santa Monica				$870,000.00	$0.00	Repower Up to 58 Transit Buses	$870,000.00	No
MS16116	Riverside Transit Agency				$10,000.00	$0.00	Repower One Transit Bus	$10,000.00	No
MS16117	Omnitrans				$175,000.00	$0.00	Expansion of Existing CNG Infrastructure	$175,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS16118	Omnitrans				$175,000.00	$0.00	Expansion of Existing CNG Infrastructure	$175,000.00	No
MS16119	Omnitrans				$150,000.00	$0.00	New Public Access CNG Station	$150,000.00	No
MS16120	Omnitrans				$945,000.00	$0.00	Purchase 39 Transit Buses and Repower 24	$945,000.00	No
Total: 38									
Closed Contracts									
MS16002	Orange County Transportation Autho	10/6/2015	5/31/2016		$722,266.00	$703,860.99	Clean Fuel Transit Service to Orange Count	$18,405.01	Yes
MS16003	Special Olympics World Games Los	10/9/2015	12/30/2015		$380,304.00	$380,304.00	Low-Emission Transportation Service for Sp	$0.00	Yes
MS16085	Southern California Regional Rail Au	3/11/2016	9/30/2016		$78,033.00	$64,285.44	Special MetroLink Service to Autoclub Spee	$13,747.56	No
Total: 3									
Open/Complete Contracts									
ML16061	City of Murrieta	4/27/2016	1/26/2020		$11,642.00	$9,398.36	Installation of EV Charging Infrastructure	$2,243.64	Yes
ML16063	City of Glendora	3/4/2016	4/3/2022		$30,000.00	$30,000.00	Purchase One H.D. Nat. Gas Vehicle	$0.00	No
MS16081	EDCO Disposal Corporation	3/4/2016	10/3/2022		$150,000.00	$150,000.00	Expansion of Existing Public Access CNG St	$0.00	No
Total: 3									

FY 2016-2018 Contracts

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Pending Execution Contracts									
MS16099	Foothill Transit				$50,000.00	$0.00	Provide Special Bus Service to the Los Ange	$50,000.00	No
MS16100	Southern California Regional Rail Au				$80,455.00	$0.00	Provide Metrolink Service to Autoclub Speed	$80,455.00	No
MS18001	Los Angeles County MTA				$807,945.00	$0.00	Provide Clean Fuel Transit Service to Dodge	$807,945.00	No
MS18002	Southern California Association of G				$2,500,000.00	$0.00	Regional Active Transportation Partnership	$2,500,000.00	No
MS18003	Geographics				$56,953.00	$0.00	Design, Host and Maintain MSRC Website	$56,953.00	No
Total: 5									
Declined/Cancelled Contracts									
MS16098	Long Beach Transit				$198,957.00	$0.00	Provide Special Bus Service to Stub Hub Ce	$198,957.00	No
Total: 1									

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 33

REPORT: California Air Resources Board Monthly Meeting

SYNOPSIS: The California Air Resources Board met on February 16, 2017, in Sacramento, CA. The following is a summary of this meeting.

RECOMMENDED ACTION:
Receive and File.

Judith Mitchell, Member
SCAQMD Governing Board

dg

The Air Resources Board's (ARB or Board) February meeting was held on February 16, 2017 in Sacramento at the California Environmental Protection Agency Headquarters Building. Key items presented are summarized below.

Consent Items

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1. **Public Meeting to Consider One Research Proposal**

The Board approved the research proposal "The Optimal Route for a Clean Heavy Duty Sector in California," University of California, Irvine, Proposal No. 2804-286. This research proposal was developed in response to the Board-approved Fiscal Year 2016-2017 Annual Research Plan.

2. **Public Meeting to Consider the Portola PM2.5 State Implementation Plan**

The Board approved the Northern Sierra Air Quality Management District State Implementation Plan (SIP) for the City of Portola and surrounding areas of Plumas County that addresses the federal 12 µg/m3 annual PM2.5 standard. The SIP demonstrates that the area will attain the standard by the 2021 through a control strategy focused on replacing older woodstoves with cleaner, more efficient, models. The plan

will be forwarded to the United States Environmental Protection Agency (U.S. EPA) for inclusion in California's SIP.

Discussion Items

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1. **Report from the Office of the Ombudsman 2016**

The Board heard a report on the 2016 enhancements to the Air Resources Board's Ombudsman's Office and Small Business program, and plans for increased engagement of California's small business stakeholders in ARB policy and regulatory processes. The Ombudsman reported on the successful collaboration of ARB with U.S. EPA Region IX and the California Green Business Network to achieve voluntary Greenhouse Gas (GHG) reductions from small businesses. The Ombudsman also discussed the Los Angeles Clean Technology Incubator, the world's third largest small business incubator and the only one focused on clean technologies. The Board also heard from Richard McCaskill and Alan Abbs, Co-Chairs of the Small Business Opportunities Advisory Panel.

2. **Public Meeting to Hear a Report on the Proposed 2030 Target Scoping Plan**

The Board heard an informational report on the proposed Scoping Plan as part of the second of three meetings to provide opportunities for public discussion. In response to Board member and stakeholder comments at the January Board meeting, ARB staff is revising the draft of the Scoping Plan released in January. The modifications will provide additional detail on the Scoping Plan's impacts on the economy and human health. For example, staff discussed the co-benefits that policies to reduce GHG emissions can have on the reduction of ozone, PM2.5 pollution and toxic air contaminants. Staff's presentation also discussed planned refinements to the Scoping Plan alternatives, including a Cap-and-Tax alternative that would limit GHG emissions from individual facilities in California. ARB staff will continue public discussions on the Scoping Plan with at least one additional workshop planned in March, and will work to support Environmental Justice Advisory Committee and community meetings. The third meeting on the Scoping Plan has been postponed to the June 2017 Board Meeting to provide additional time for stakeholder comments.

Attachment
CARB February 16, 2017 Meeting Agenda

California Environmental Protection Agency

Air Resources Board

PUBLIC MEETING AGENDA

February 16, 2017

Webcast

LOCATION:
California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium, 2nd Floor
1001 I Street
Sacramento, California 95814

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 16, 2017
9:00 a.m.

CONSENT CALENDAR:
The following items 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 them.

Consent Item #

17-2-1: Public Meeting to Consider One Research Proposal

The Board will consider approving one research proposal that was developed in response to the Board-approved Fiscal Year 2016-2017 Annual Research Plan.

1) *"The Optimal Route for a Clean Heavy Duty Sector in California," University of California, Irvine, Proposal No. 2804-286.*

More Information *Proposed Resolution*

17-2-2: Public Meeting to Consider the Portola PM2.5 State Implementation Plan

The Board will consider the Northern Sierra Air Quality Management District State Implementation Plan (SIP) for the City of Portola and surrounding areas of Plumas County that addresses the federal 12 µg/m3 annual PM2.5 standard. The SIP demonstrates how the area will attain the standard by the 2021 statutory attainment date. If approved the plan will be forwarded to the United States Environmental Protection Agency for inclusion in California's 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 #

17-2-3: Report from the Office of the Ombudsman 2016

The Board will hear a report on the 2016 enhancements to the Air Resources Board's Ombudsman and Small Business program, including a plan for a more comprehensive engagement process for regulated small businesses.

More Information *Staff Presentation*

17-2-5: Public Meeting to Hear a Report on the Proposed 2030 Target Scoping Plan

Spanish translation will be provided at the Board Meeting for this item, Item 17-2-5.

The Board will hear an overview of the Proposed 2030 Target Scoping Plan. The Proposed Plan recommends a suite of measures to reduce greenhouse emissions 40 percent below 1990 levels by 2030 and put the State on a trajectory to meet the 2050 goal. This will be the second of three Board hearings on this item.

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. California Air Resources Board, et al., Superior Court of California (Fresno County), Case No. 15CECG03380.

American Fuels and Petrochemical Manufacturers, et al. v. Jane O'Keeffe, et al., U.S. District Court (D. Ore. Portland), Case No. 3:15-CV-00467; Plaintiffs' appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 15-35834.

POET, LLC, et al. v. Corey, et al., Superior Court of California (Fresno County), Case No. 09CECG04659; plaintiffs' appeal, California Court of Appeal, Fifth District, Case No. F064045; California Supreme Court, Case No. S213394 [remanded to trial court]; plaintiff's appeal of trial court order discharging peremptory writ of mandate, Court of Appeal, Fifth District, Case No. F073340.

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. 12-15131 [remanded to trial court].

American Fuels and Petrochemical Manufacturers, 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 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.

Kimberly-Clark Worldwide, Inc. v. California Air Resources Board, et al., Sacramento County Superior Court, Case No. 34-2015-80002246.

State of West Virginia et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1363.

Murray Energy Corporation v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1385.

State of North Dakota, et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 16-1242.

State of North Dakota v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1381.

State of Wyoming, et al. v. United States Department of the Interior, et al., U.S. District Court, District of Wyoming, Case No. 16-CV-285-SWS.

Alliance for California Business v. California Air Resources Board, et al., Glenn County Superior Court, Case No. 13CV01232; plaintiffs' appeal, Court of Appeal, Third District, Case No. C082828.

Alliance for California Business v. California State Transportation Agency, et al., Sacramento County Superior Court, Case No. 34-2016-80002491.

Dalton Trucking, Inc. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 13-1283 (dismissed), U.S. Court of Appeals, Ninth Circuit, Case No. 13-74019.

Owner-Operator Independent Drivers Association Inc. et al. v. 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), plaintiffs' appeal U.S. Court of Appeals, Ninth Circuit, Case Nos. 15-72101 and 15-16429.

Jack Cody dba Cody Transport v. California Air Resources Board, et al., Sacramento Superior Court, Case No. 34-2015-80002116; plaintiff's appeal, Court of Appeal, Third District, Case No. C083083.

John R. Lawson Rock & Oil, Inc. et al. v. California Air Resources Board et al., Fresno County Superior Court, Case No. 14-CECG01494; ARB's appeal, Court of Appeal, Fifth District, Case No. F074003.

Transportation Solutions Defense and Education Fund v. California Air Resources Board, Fresno County Superior Court, Case No. 14CECG01788 (plaintiff's transfer to Sacramento Superior Court, Case No. 34-2014-80001974-CU-WM-GDS).

Meeks v. California Air Resources Board, et al. Los Angeles County Superior Court, Case No. BC592558.

Adam Brothers Farming, Inc. v. California Air Resources Board, et al., Santa Barbara County Superior Court, Case No. 15 CV04432.

In re: Volkswagen "Clean Diesel" MDL, United States District Court, Northern District of California, Case No. 15-MD-2672-CRB (JSC).

American Coating Association, Inc. v. State of California and California Air Resources Board, Sacramento County Superior Court, Case No. 04CS01707.

Hamilton v. California Air Resources Board, et al., U.S. District Court for the Eastern District of California, Case No. 1:15-CV-01942-AWI-SKO.

Mahan v. California Air Resources Board, Sacramento County Superior Court, Case No. 34-2016-80002416.

California Air Resources Board v. Adam Brothers Farming Inc., Santa Barbara County Superior Court, Case No. 16CV01758.

California Air Resources Board v. BP West Coast Products LLC, Contra Costa County Superior Court, Case No. C12-00567.

People of the State of California ex rel. California Air Resources Board v. Marten Transport Logistics, LLC, Los Angeles County Superior Court, Case No. BC645288.

California Air Resources Board v. SSA Containers, Inc., Los Angeles County Superior Court, Case No. BC628573 and No. BC628722.

People v. Southern California Gas Company, Los Angeles Superior Court, Case No. BC 602973.

California Air Resources Board v. West Coast Diesel, Inc., Fresno County Superior Court, Case No. 15 CECG 03337.

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:

https://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, 23rd Floor, Sacramento, California 95814
(916) 322-5594
ARB Homepage: 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 envié 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.

SMOKING IS NOT PERMITTED AT MEETINGS OF THE CALIFORNIA AIR RESOURCES BOARD

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 34

REPORT: Status Report on Regulation XIII – New Source Review

SYNOPSIS: This report presents the federal preliminary determination of equivalency for January 2015 through December 2015. As such, it provides information regarding the status of Regulation XIII – New Source Review in meeting federal NSR requirements and shows that SCAQMD's NSR program is in preliminary compliance with applicable federal requirements from January 2015 through December 2015.

COMMITTEE: Stationary Source Committee, February 17, 2017

RECOMMENDED ACTION:
Receive and file the attached report.

Wayne Nastri
Executive Officer

LT:WCT:JDT

SUMMARY

SCAQMD's New Source Review (NSR) Rules and Regulations are designed to comply with federal and state Clean Air Act requirements and to ensure that emission increases from new and modified sources do not interfere with efforts to attain and maintain the federal and state air quality standards, while economic growth in the South Coast region is not unnecessarily impeded. Regulation XIII - New Source Review regulates and accounts for all emission changes (both increases and decreases) from the permitting of new, modified, and relocated stationary sources within SCAQMD, excluding NOx and SOx sources that are subject to Regulation XX – Regional Clean Air Incentives Market (RECLAIM)[1].

Rule 1315 – Federal New Source Review Tracking System, was adopted by the Board on February 4, 2011 to maintain SCAQMD's ability to issue permits to major sources that

[1] While the RECLAIM program is different than command and control rules for NOx and SOx, its NSR requirements, as specified in Rule 2005, are designed to comply with the governing principles of NSR contained in the federal Clean Air Act (CAA) and the California State Health and Safety Code.

require offsets, but obtain offset credits from the SCAQMD's Priority Reserve under Rule 1309.1, and/or that are exempt from offsets under SCAQMD Rule 1304. In addition, Rule 1315 requires that, commencing with calendar year 2010, and for each calendar year thereafter, the Executive Officer prepare a Preliminary Determination of Equivalency (PDE) and Final Determination of Equivalency (FDE) which cover NSR activities for twelve-month periods. The calendar year 2015 PDE and FDE are required to be reported to the SCAQMD Governing Board at the February and September 2017 Board meetings, respectively. Rule 1315 also requires the Executive Officer to aggregate and track offsets debited from and deposited to SCAQMD's offset accounts for specified periods between October 1, 1990 and December 31, 2005 and each calendar year from 2006 through 2030 for purpose of making periodic determinations of compliance. The last annual report submitted to the SCAQMD Board on September 2, 2016 presented the FDE for calendar year 2014 and demonstrated that SCAQMD's NSR program continues to meet the federal offset requirements for calendar year 2014.

This report, which presents the PDE covering the calendar year 2015 reporting period, demonstrates compliance with federal NSR requirements by establishing aggregate equivalence with federal offset requirements for sources that were not exempt from federal offset requirements, but were either exempt from offsets or obtained their offsets from SCAQMD pursuant to Regulation XIII.

The PDE for the calendar year 2015 is summarized in Table 1. Additionally, the projections of SCAQMD's federal offset account balances for January 2016 through December 2016 and January 2017 through December 2017 as specified and required pursuant to Rule 1315(e) are presented in Table 2. These results demonstrate that there were, and project that there will be, adequate offsets available to mitigate all applicable emission increases during these reporting periods. This report, therefore, demonstrates that, for calendar years 2015 through 2017, SCAQMD's NSR program continues to meet and is projected to meet federal offset requirements and is equivalent to those requirements on an aggregate basis[2]. Although the United States Environmental Protection Agency (U.S. EPA) designated the SCAQMD as attainment with the federal CO standard effective June 11, 2007, SCAQMD will continue to track and report CO accumulated credits and account balances for informational purposes only.

[2] SCAQMD's NSR program is deemed to be equivalent to federal offset requirements because SCAQMD's ending offset account balances remained positive, indicating there were adequate offsets during this reporting period.

Table 1
PDE for January 2015 through December 2015

DESCRIPTION	VOC	NOx	SOx	CO	PM10
2014 Actual Ending Balance[a] (tons/day)	**98.89**	**26.13**	**3.39**	**12.33**	**14.59**
2015 Discount of Credits for Surplus Adjustment[b] (tons/day)	-0.03	-3.04	0.00	0.00	0.00
2015 Starting Balance (tons/day)	**98.86**	**23.09**	**3.39**	**12.33**	**14.59**
2015 Actual Total Credits[c] (lbs/day)	0	0	0	0	0
2015 Actual Total Credits[c] (tons/day)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
2015 Actual Total Debits[d] (lbs/day)	-719	-838	0	-1,710	-115
2015 Actual Total Debits[d] (tons/day)	**-0.36**	**-0.42**	**0.00**	**-0.86**	**-0.06**
2015 Preliminary Ending Balance[e] (tons/day)	**98.50**	**22.67**	**3.39**	**11.47**	**14.53**

[a] "2014 Actual Ending Balance" is from Table 1 of the 2014 FDE report dated September 2, 2015.

[b] This adjustment is surplus at the time of use discount, which is also discussed in Rule 1315(c)(4).

[c] PDE does not account for any credits for calendar year 2015, however, credits will be included in the Final Determination of Equivalency.

[d] For an explanation of the sources of debits please refer to page 7 of this report, as well as Rule 1315(c) and the February 4, 2011 Rule 1315 staff report.

[e] "2015 Preliminary Ending Balance" equals the "2014 Actual Ending Balance" reduced by any surplus adjustments and the sum of actual debits.

Table 2
Projections of SCAQMD's Federal Offset Account Balances for January 2016 through December 2016, and January 2017 through December 2017

DESCRIPTION	VOC	NOx	SOx	CO	PM10
2015 Preliminary Ending Balance[a] (tons/day)	**98.50**	**22.67**	**3.39**	**11.47**	**14.53**
2016 Projected Discount of Credits for Surplus Adjustment[b] (tons/day)	-0.23	-1.13	0.00	-0.09	0.00
2016 Projected Starting Balance (tons/day)	**98.27**	**21.54**	**3.39**	**11.38**	**14.53**
2016 Total Projected Credits[c] (lbs/day)	12,000	2,320	400	4,480	1,600
2016 Total Projected Debits[c] (lbs/day)	-740	-640	0	-3,820	-180
2016 Sum of Projected Credits/Debits[c] (lbs/day)	11,260	1,680	400	660	1,420
2016 Sum of Projected Credits/Debits[c] (tons/day)	**5.63**	**0.84**	**0.20**	**0.33**	**0.71**
2016 Projected Ending Balance[d] (tons/day)	**103.90**	**22.38**	**3.59**	**11.71**	**15.24**
2017 Projected Discount of Credits for Surplus Adjustment[b] (tons/day)	-0.24	-1.12	0.00	-0.09	0.00
2017 Projected Starting Balance (tons/day)	**103.66**	**21.26**	**3.59**	**11.62**	**15.24**
2017 Total Projected Credits[c] (lbs/day)	12,000	2,320	400	4,480	1,600
2017 Total Projected Debits[c] (lbs/day)	-740	-640	0	-3,820	-180
2017 Sum of Projected Credits/Debits[c] (lbs/day)	11,260	1,680	400	660	1,420
2017 Sum of Projected Credits/Debits[c] (tons/day)	**5.63**	**0.84**	**0.20**	**0.33**	**0.71**
2017 Projected Ending Balance[e] (tons/day)	**109.29**	**22.10**	**3.79**	**11.95**	**15.95**

[a] "2015 Preliminary Ending Balance" is as shown in Table 1.

[b] This adjustment is surplus at the time of use discount, which is also discussed in Rule 1315(c)(4).

[c] For an explanation of the sources of debits and credits please refer to page 7 of this report, as well as Rule 1315(c) and the Rule 1315 January 7, 2011 staff report. Credits are shown as positive and debits as negative, while the sum of credits/debits are shown as positive or negative, as appropriate.

[d] "2016 Projected Ending Balance" equals the "2015 Preliminary Ending Balance" plus any projected surplus adjustments and the sum of projected credits and projected debits.

[e] "2017 Projected Ending Balance" equals the "2016 Projected Ending Balance" plus any projected surplus adjustments and the sum of projected credits and projected debits.

BACKGROUND

SCAQMD originally adopted its New Source Review Rules and Regulations (NSR program) in 1976. U.S. EPA approved SCAQMD's NSR program into California's State Implementation Plan (SIP) initially on January 21, 1981 (46FR5965) and again on December 4, 1996 (61FR64291). Most recently, U.S. EPA approved SCAQMD's May 3, 2002 Rule 1309.1 amendments into the SIP on June 19, 2006 (71FR35157). The original program has evolved into the current version of the Regulation XIII rules in response to federal and state legal requirements and the changing needs of the local environment and economy. Specific amendments to the NSR rules were adopted by SCAQMD's Board on December 6, 2002 to facilitate and provide additional options for credit generation and use. Rule 1315 was adopted and re-adopted on September 8, 2006 and August 3, 2007, respectively. Rule 1309.1 was amended and replaced on September 8, 2006 and August 3, 2007, respectively. On November 3, 2008, in response to a law suit filed by a group of environmental organizations, a California State Superior Court Judge in the County of Los Angeles invalidated the August 3, 2007 adopted Rule 1315 and amendments to Rule 1309.1, and prohibited SCAQMD from taking any action to implement Rule 1315 or the amendments to Rule 1309.1 until it had prepared a new environmental assessment under the California Environmental Quality Act (CEQA). On February 4, 2011 SCAQMD adopted a revised and enhanced version of Rule 1315, which included a new CEQA assessment. U.S. EPA approved Rule 1315 in 2012 (77FR31200).

One element of SCAQMD's NSR program design is to offset emission increases in a manner at least equivalent to federal and state statutory NSR requirements. To this end, SCAQMD's NSR program implements the federal and state statutory requirements for NSR and ensures that construction and operation of new, relocated and modified stationary sources does not interfere with progress towards attainment of the National and State Ambient Air Quality Standards. SCAQMD's computerized emission tracking system is utilized to demonstrate equivalence with federal and state offset requirements on an aggregate basis. Specific NSR requirements of federal law are presented below.

Federal Law

The NSR requirements of federal law vary with respect to the area's attainment status and classification. Based on their classification in 2007, the South Coast Air Basin (SOCAB) and Salton Sea Air Basin (SSAB) must comply with the requirements for severe 17 and severe non-attainment areas, respectively, for ozone precursors (i.e., VOC and NOx). However, in May of 2010, the SOCAB was re-designated as an extreme non-attainment area for ozone. During the equivalency period, both the SOCAB and the SSAB complied with their respective requirements for ozone non-attainment and serious non-attainment for PM10 and its precursors (i.e., VOC, NOx and SOx)[3]. SSAB is considered attainment

[3] As of July 26, 2013, SOCAB was redesignated as attainment for the federal 24-hour PM10 standard and U.S. EPA approved a PM10 maintenance plan; however, Rule 1303 still requires offsets for PM10 since SOCAB is considered non-attainment for state PM10 Ambient Air Quality Standards, so that pollutant continues to be

for CO. Although effective June 11, 2007, U.S. EPA designated the SOCAB as attainment with federal CO standards, SCAQMD will continue to track and report CO accumulated credits and account balances for informational purposes only. Both SOCAB and SSAB are considered attainment for SO_2 and NO_2; however, SOx and NOx are precursors to pollutants for which both SOCAB and SSAB are designated as non-attainment[4]. The Mojave Desert Air Basin (MDAB) is currently classified as moderate non-attainment for ozone precursors (i.e., VOC and NOx) and as attainment for NO_2, SO_2, and CO. Federal law requires the use of Lowest Achievable Emission Rate (LAER) and offsets for emissions of nonattainment pollutants (or their precursors) for new, modified, and relocated stationary sources, when the source is considered a major stationary source[5] for the nonattainment pollutants (or their precursors). This report demonstrates compliance with the federal NSR offsets requirements.

OVERVIEW OF ANALYSIS METHODOLOGY

The two most important elements of federal non-attainment NSR requirements are LAER and emission offsetting for major sources. As set forth in SCAQMD's Best Available Control Technology (BACT) Guidelines, SCAQMD's BACT requirements are at least as stringent as federal LAER for major sources. Furthermore, the NSR emission offset requirements that SCAQMD implements through its permitting process ensure that sources provide emission reduction credits (ERCs) to offset their emission increases in compliance with federal requirements. As a result, these sources each comply with federal offset requirements by providing their own ERCs. However, certain sources are exempt from SCAQMD's offset requirements pursuant to Rule 1304 or qualify for offsets from SCAQMD's Community Bank (applications received between October 1, 1990 and February 1, 1996 only) or Priority Reserve, both pursuant to Rule 1309.1. SCAQMD has determined that providing offset exemptions and the Priority Reserve (as well as the previously-administered Community Bank) is important to the NSR program and the local economy while encouraging installation of BACT. Therefore, SCAQMD has assumed the responsibility of providing the necessary offsets for exempt sources, the Priority Reserve, and the Community Bank. This report examines withdrawals from SCAQMD's emission offset accounts during calendar year 2015 and demonstrates

tracked. Although the Clean Air Act no longer requires offsets for PM10 major sources in SOCAB, PM2.5 is not covered by Rule 1315 or Rule 1304 and is subject to its own NSR Rule, 1325.

[4] SOx is a precursor to PM10 and NOx is a precursor to both PM10 and ozone.

[5] The major source thresholds for SOCAB, SSAB and MDAB, based on their attainment status during the calendar year 2007 through 2010 reporting periods, are summarized below:

Pollutant	SOCAB	SSAB	MDAB
VOC	10 tons/year	25 tons/year	100 tons/year
NOx	10 tons/year	25 tons/year	100 tons/year
SOx	100 tons/year	100 tons/year	100 tons/year
PM10	70 tons/year	70 tons/year	100 tons/year
CO	50 tons/year	100 tons/year	100 tons/year

programmatic equivalence on an aggregate basis with federal emission offset requirements for the sources exempt from providing offsets and the sources that receive offsets from the Priority Reserve or the Community Bank.

SCAQMD's Offset Accounts

For the purposes of this report, federal debit and credit accounting for SCAQMD's offset accounts was conducted pursuant to the same procedures previously agreed to by U.S. EPA and as delineated in Rule 1315 and described in the staff report. Each of the pollutants subject to offset requirements has its own federal offset account. SCAQMD's NSR program is considered to provide equivalent or greater offsets of emissions as required by federal requirements for each subject pollutant provided the balance of offsets left in SCAQMD's federal offset account for each pollutant remains positive, indicating that there were adequate offsets available.

Debit Accounting

SCAQMD tracks all emission increases that are offset through the Priority Reserve or the Community Bank, as well as all increases that are exempt from offset requirements pursuant to Rule 1304 – Exemptions. These increases are all debited from SCAQMD's federal offset accounts when they occur at federal major sources. For federal equivalency demonstrations, SCAQMD uses an offset ratio of 1.2-to-1.0 for extreme non-attainment pollutants (ozone and ozone precursors, *i.e.,* VOC and NOx) and uses 1.0-to-1.0 for all other non-attainment pollutants (non-ozone precursors, i.e., SOx, CO, and PM10) to offset any such increases. That is, 1.2 pounds are deducted from SCAQMD's offset accounts for each pound of maximum allowable permitted potential to emit VOC or NOx increase at a major source and 1.0 pound is deducted for each pound of maximum allowable permitted potential to emit SOx, CO, or PM10 at a major source. A more detailed description of federal debit accounting is provided in the Rule 1315 staff report and Rule 1315(c)(2).

Furthermore, to comply with U.S. EPA's NSR Reform requirements applicable to extreme non-attainment areas for ozone, the SCAQMD tracks changes to facility-wide limits under Rule 1304 – Exemptions and debit any increases from the federal offset accounts accordingly.

Credit Accounting

When emissions from a permitted source are permanently reduced (e.g., installation of control equipment, removal of the source) and the emission reduction is not required by rule or law and is not called for by an AQMP control measure that has been assigned a target implementation date[6], the permit holder may apply for ERCs for the pollutants

[6] Refer to Rule 1309(b) for a complete explanation of eligibility requirements.

reduced. If the permit holder for the source generating the emission reduction had previously received offsets from SCAQMD or has a "positive NSR balance" (i.e., pre-1990 net emission increase), the quantity of SCAQMD offsets used or the amount of the positive NSR balance is subtracted from the reduction and "paid back" to SCAQMD's accounts prior to issuance of an ERC pursuant to Rule 1306. In certain other cases, permit holders do not always submit applications to claim ERCs or do not qualify to obtain ERCs for their equipment shutdowns or other eligible emission reductions. These unclaimed reductions are referred to as "orphan shutdowns" and are deposited in SCAQMD's offset accounts. ERCs provided as offsets by major sources in excess of the applicable federally-required offset ratio and all ERCs provided as offsets by minor sources not subject to federal offset requirements are also deposited in SCAQMD's federal offset accounts. A more detailed description of federal credit accounting is provided in Rule 1315(c)(3)(A) and its staff report.

DETERMINATION OF EQUIVALENCY WITH FEDERAL OFFSET REQUIREMENTS

The federal offset requirements PDE for calendar year 2015 and the projections for calendar years 2016 and 2017 are summarized in Tables 1, and 2, respectively. The detailed listing of actual final withdrawals, deposits, and sum of withdrawals and deposits are shown in Tables A and B of Attachment 1 to this letter.

These account balances, shown in Tables A and B, reflect the tracking sequence described under Rule 1315(c)(5).

CONCLUSIONS

The analysis presented in this report demonstrates the following:

- For calendar year 2015, SCAQMD's NSR program provided equivalent offsets to those required by federal NSR requirements and is at least preliminarily equivalent to the federal requirements on an aggregate basis. This conclusion is based on the fact that the preliminary ending offset account balances for the calendar year reporting period, as shown in Table 1, remained positive for all pollutants.

- SCAQMD's projected offset account balances for 2016 and 2017 are projected to remain positive. This means that the sum of the estimated deposits to and withdrawals from SCAQMD's offset accounts during 2016 and 2017 are projected to remain positive.

ATTACHMENTS

1. Detailed listing of actual debits, preliminary credits, and sum of debits and credits
2. Board Meeting Presentation

ATTACHMENT 1

Detailed listing of actual debits, preliminary credits, and sum of debits and credits

Table A
Total Actual Debits from SCAQMD's Federal Offset Accounts
(January 2015 through December 2015)

DISTRICT OFFSETS USED	VOC	NOx	SOx	CO	PM10
Priority Reserve (lbs/day)	-309	-658	0	0	0
Community Bank (lbs/day)	0	0	0	0	0
Rule 1304 Exemptions (lbs/day)	-290	-40	0	-1,710	-115
Sum Total of SCAQMD Offsets (lbs/day)	-599	-698	0	-1,710	-115
1.2-to-1.0 Offset Ratio (lbs/day)	-120	-140	N/A	N/A	N/A
Total Actual Debits to SCAQMD Account (lbs/day)	**-719**	**-838**	**0**	**-1,710**	**-115**
Total Actual Debits to SCAQMD Account (tons/day)	**-0.36**	**-0.42**	**0.00**	**-0.86**	**-0.06**

Table B
Sum of Preliminary Credits/Debits Activities in SCAQMD's Federal Offset Accounts
(January 2015 through December 2015)

	VOC	NOx	SOx	CO	PM10
Total Actual Debits* (lbs/day)	-719	-838	0	-1,710	-115
Total Actual Credits* (lbs/day)	0	0	0	0	0
Sum of Actual Debits(-)/Credits(+)* (lbs/day)	**-719**	**-838**	**0**	**-1,710**	**-115**
Sum of Actual Debits(-)/Credits(+)* (tons/day)	**-0.36**	**-0.42**	**0.00**	**-0.86**	**-0.06**

* Debits are shown as negative and Credits as positive, while their sum is shown as negative or positive, as appropriate. No credits are accounted for in the Preliminary Determination of Equivalency analysis.

Attachment 2

Status Report on Regulation XIII – New Source Review

Governing Board Meeting
March 3, 2017

NSR Status Report Overview

Purpose:

Demonstrate SCAQMD's NSR program meets federal NSR offset requirements for Major Sources, as required by EPA, for sources that are exempt from offsets under SCAQMD's NSR rule

NSR Status Report History

- SCAQMD has produced Annual NSR Status Reports since 1990
- Around 2002-2004 EPA requested SCAQMD adopt a rule to memorialize equivalency demonstrations
- SCAQMD adopted Rule 1315 (Federal NSR Tracking System) in 2006/2007 and adopted a revised Rule 1315 in 2011
- EPA approved Rule 1315 into the SIP and it became effective on June 25, 2012

Rule 1315
Federal NSR Tracking System

- Rule 1315 established procedures to demonstrate equivalency with federal NSR offset requirements
  - Tracks debits from and credits to SCAQMD's federal internal offset account for each pollutant
  - Annual Preliminary Determinations of Equivalency (PDE), Final Determinations of Equivalency (FDE) and Projections
  - Balance in SCAQMD's federal offset account must remain positive

SCAQMD's Federal NSR Offset Accounts

Preliminary Determination of Equivalency (PDE)* (CY 2015)

DESCRIPTION	VOC	NOx	SOx	CO	PM10
2014 Final Ending Balance (tons/day)	**98.89**	**26.13**	**3.39**	**12.33**	**14.59**
2015 Total Credits (tons/day)*	0.00	0.00	0.00	0.00	0.00
2015Total Debits (tons/day)	-0.36	-0.42	0.00	-0.86	-0.06
2015 Total Discount of Credits for Surplus Adjustment (tons/day)	-0.03	-3.04	0.00	0.00	0.00
2015 Preliminary Ending Balance (tons/day)	**98.50**	**22.67**	**3.39**	**11.47**	**14.53**

***PDE does not account for any credits for CY 2015, however, credits will be included in the Final Determination of Equivalency.**

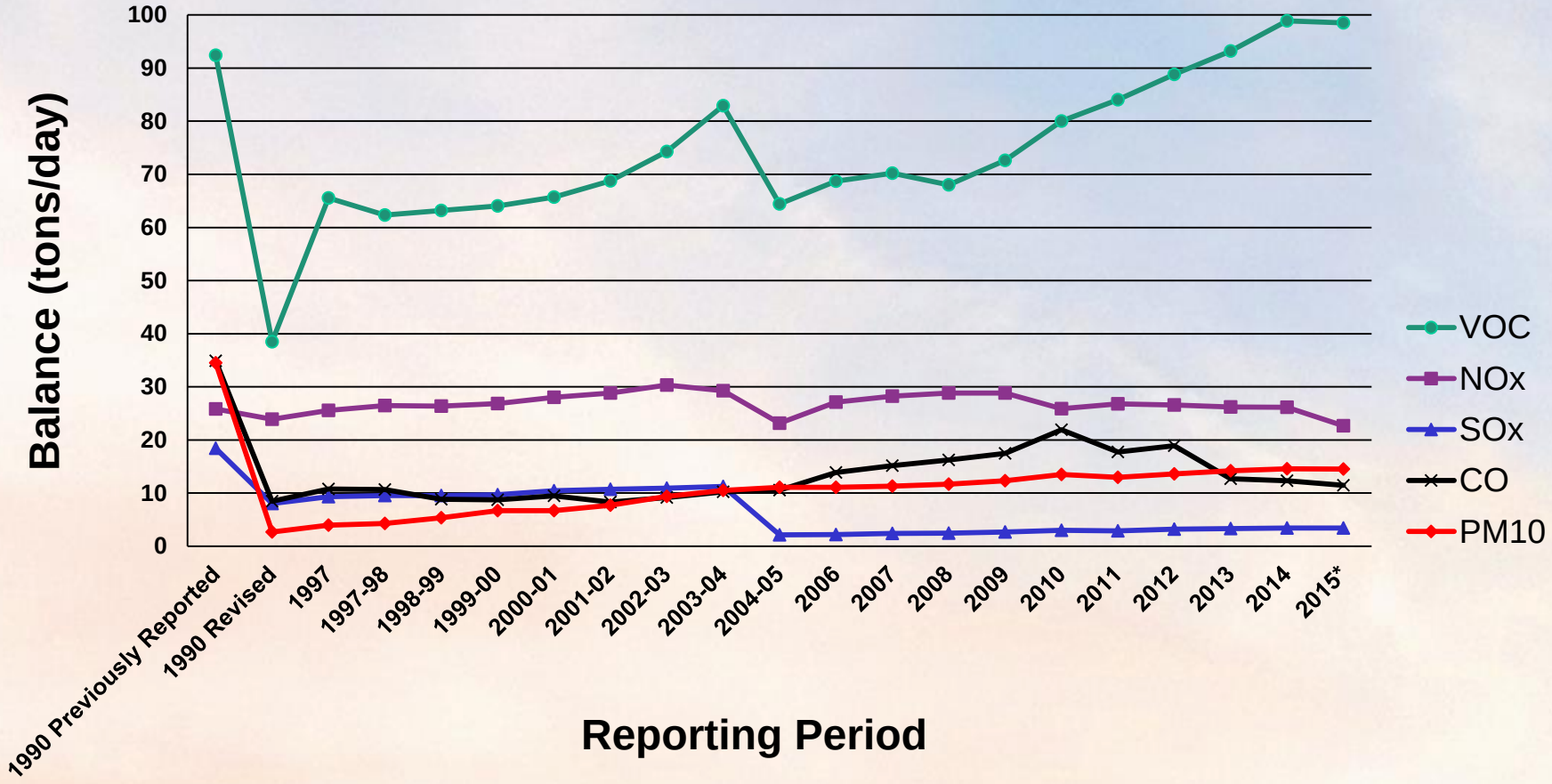
SCAQMD's Projected Federal NSR Offset Accounts CY 2016

DESCRIPTION	VOC	NOx	SOx	CO	PM10
2015 Preliminary Ending Balance (tons/day)	**98.50**	**22.67**	**3.39**	**11.47**	**14.53**
2016 Total Projected Credits (tons/day)	6.00	1.16	0.20	2.24	0.80
2016 Total Projected Debits (tons/day)	-0.37	-0.32	0.00	-1.91	-0.09
2016 Total Projected Discount of Credits for Surplus Adjustment (tons/day)	-0.23	-1.13	0.00	-0.09	0.00
2016 Projected Ending Balance (tons/day)	**103.90**	**22.38**	**3.59**	**11.71**	**15.24**

SCAQMD's Projected Federal NSR Offset Accounts CY 2017

DESCRIPTION	VOC	NOx	SOx	CO	PM10
2016 Projected Ending Balance (tons/day)	**103.90**	**22.38**	**3.59**	**11.71**	**15.24**
2017 Total Projected Credits (tons/day)	6.00	1.16	0.20	2.24	0.80
2017 Total Projected Debits (tons/day)	-0.37	-0.32	0.00	-1.91	-0.09
2017 Total Projected Discount of Credits for Surplus Adjustment (tons/day)	-0.24	-1.12	0.00	-0.09	0.00
2017 Projected Ending Balance (tons/day)	**109.29**	**22.10**	**3.79**	**11.95**	**15.95**

SCAQMD's Federal Offset Account Balances (1990 – 2015*)



*Preliminary determination

Conclusions

- The Preliminary analysis for CY 2015 shows SCAQMD's NSR program continued to be equivalent to the federal NSR offset requirements

- For CYs 2016 and 2017 it is also projected that SCAQMD's NSR program will continue to be equivalent to the federal NSR offset requirements

- Next Final Demonstration of Equivalency for CY 2015 will be presented to the Governing Board on September 1, 2017

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 36

PROPOSAL: Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

SYNOPSIS: Proposed Rule 1430 will reduce particulate matter and toxic emissions and help to reduce odors from metal grinding and cutting operations at forging facilities. Metal grinding and cutting operations are currently exempt from SCAQMD permits. Based on monitoring, sampling, and site visits, metal grinding at forging facilities can be a significant source of metal particulate emissions, some of which are also toxic air contaminants. The proposed rule will prohibit forging facilities from conducting grinding and cutting operations in the open air and includes requirements to vent metal grinding and cutting operations to emission control devices, to meet a specified emission standard for the emission control devices, conduct metal grinding and cutting operations in a building enclosure to reduce fugitive emissions, and implement a series of housekeeping measures to further minimize fugitive emissions.

COMMITTEE: Stationary Source, January 20, 2017, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached resolution:
1. Certifying the Final Environmental Assessment for Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities; and
2. Adopting Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities.

Wayne Nastri
Executive Officer

PF: SN:EK:DG

Background
Metal grinding operations at metal forging facilities are unique, based on the magnitude and power of the grinding equipment, combined with the intensity of the grinding operations. Metal grinding and cutting operations are currently an unregulated source. As such, some metal forging facilities conduct metal grinding and cutting operations in the open air with no pollution controls, while other facilities have pollution controls, however, there are no requirements to ensure these controls are properly operated and maintained. Air monitoring and sampling has shown metal particulate, some of which are toxic air contaminants such as nickel and cadmium, are associated with metal grinding and cutting operations.

Metal grinding operations at metal forging facilities was brought to SCAQMD's attention by community representatives in the city of Paramount through a series of odor complaints that began in 2012. Through air quality analyses and investigation, the SCAQMD staff identified Carlton Forge Works' metal grinding operation as the primary source of the odor complaints. Carlton Forge Works is a metal forging facility that manufactures large seamless rings for the aerospace industry. Based on air monitoring near Carlton Forge Works, nickel and hexavalent chromium were the metals of greatest concern based on the levels measured and their toxicity.

Although Carlton Forge Works was conducting their metal grinding operation within a building and had pollution controls, point source controls were not operated properly and fugitive emissions were escaping from large vents and bay doors in the building. As a result, initial nickel levels averaged 90 ng/m^3 with levels as high as 300 ng/m^3. As Carlton Forge Works implemented a series of voluntary measures to their point source controls and building enclosure to reduce emissions from their grinding operations between 2013 through 2015, average nickel levels decreased to 16 ng/m^3. During the rulemaking process, SCAQMD staff has found similar, and in most cases lesser, pollution controls for metal grinding operations at other forging facilities as compared to Carlton Forge Works prior to implementing voluntary measures. Given that all alloys contain some level of toxic metals, it is expected that similar and possibly higher PM and toxic metal levels are emitted from metal grinding operations at other forging facilities as compared to Carlton Forge Works.

Hexavalent chromium levels near Carlton Forge Works were generally not affected by implementation of the voluntary measures, indicating that the source of hexavalent chromium is likely from a source other than metal grinding, and possibly from the hot forging process or a source unrelated to Carlton Forge Works. The levels of hexavalent chromium near Carlton Forge Works are on average approximately 0.4 ng/m^3, with some days as high as 1 ng/m^3, which is substantially lower than levels found in October 2016 in other industrial areas in the city of Paramount that were over 20 ng/m^3. The SCAQMD staff is continuing to investigate the source(s) of hexavalent chromium in the

industrial areas in the City of Paramount and has taken, and will continue to take, the appropriate regulatory or other actions to reduce these emissions.

Proposal

The SCAQMD staff has identified 22 metal forging facilities that conduct metal grinding or cutting operations that are subject to Proposed Rule 1430. Proposed Rule 1430 will prohibit grinding in the open air beginning date of adoption. At full implementation, all facilities will be required to conduct their operations within a total enclosure, and those facilities that are within 500 feet of a sensitive receptor or 1,000 feet of a school or an early education center will be required to operate the total enclosure under negative air that is vented to air pollution controls.

Proposed Rule 1430 establishes a point source emission standard of 0.002 grains per dry standard cubic feet, and requires facilities to install High Efficiency Particulate Arrestors (HEPA). Compliance with the point source emission standard is demonstrated through a PM source test. The proposed rule also requires a multi-metals and hexavalent chromium source test every four years, with specific exclusions for facilities with low total chromium levels. To ensure continuous compliance, the proposed rule requires installation of a bag leak detection system, a continuous data logger to measure the pressure across the HEPA filter, and smoke tests to verify air flow for the pollution controls. To further ensure compliance with point source requirements, the proposed rule requires additional source testing requirements if the pressure across the HEPA continuously falls out of range for prolonged periods of time.

Proposed Rule 1430 establishes a series of housekeeping requirements and recordkeeping requirements. The proposed rule also includes odor contingency measures that a facility must implement if a facility receives four or more confirmed odor complaints that are related to metal grinding or metal cutting operations. The proposed rule will also require each facility to place signs that have a facility contact and the SCAQMD's 1-800-CUT-SMOG to report air quality issues.

Public Process

Proposed Rule 1430 was developed with input from a stakeholder working group that included representatives from industry, consultants, environmental groups, community groups, and public agencies. Six working group meetings were held on October 7, 2015, September 14, 2016, October 26, 2016, December 1, 2016, January 11, 2017, and February 6, 2017. At the request of community representatives, the September and December working group meetings were held in evening in the city of Paramount. A Public Workshop was held on January 19, 2017 to present the proposed rule and receive public comment, and a Public Consultation meeting was held on January 25, 2017 in the city of Paramount.

Key Issue
Through the rulemaking process, staff has been working with stakeholders and has resolved a number of issues. One remaining key issue is regarding the cost of air pollution controls. One metal forging facilities has commented that the cost to install air pollution controls necessary to comply with the proposed rule are burdensome and could potentially result in the facility closing. Based on a site visit to the facility during the rulemaking process, the facility conducts grinding outside of a building enclosure with no air pollution controls. The estimated capital cost for the facility to comply with PR 1430 is approximately $340,000. These costs are disproportionately higher than other facilities with similar grinding operations that are subject to PR 1430, because the facility currently lacks a building enclosure and air pollution controls for their metal grinding operations. As a result, the estimated compliance cost for the facility reflects the cost to construct a total enclosure, install new air pollution control equipment, and purchase proper housekeeping equipment.

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. PR 1430 is not a control measure in the Draft 2016 AQMP, but is needed to reduce the generation of fugitive metal particulates from metal grinding or metal cutting emissions from metal forging facilities.

California Environmental Quality Act
Pursuant to California Environmental Quality Act (CEQA) Guidelines §15252 and §15070 and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) for PR 1430. The environmental analysis in the Draft EA concluded that PR 1430 would not generate any significant adverse environmental impacts and therefore, no alternatives or mitigation measures are required. The Draft EA was released for a 30-day public review and comment period from January 10, 2017 to February 10, 2017. Three comment letters were received from the public relative to the Draft EA and responses to the comments have been prepared. The comment letters and the individual responses to the comments have been included in Appendix E of the Final EA. Subsequent to release of the Draft EA, modifications were made to the proposed project. SCAQMD staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the Draft EA. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5. Therefore, the Draft EA is now a Final EA and is included as an attachment to the Board package. The SCAQMD Board must review the adequacy of the Final EA, including responses to comments, prior to certification of the Final EA and adoption of PR 1430.

Socioeconomic Assessment
The main requirements of the proposed rule that have cost impacts for affected facilities would include the installation of baghouses with HEPA filters (point-source controls on existing and new enclosures) and the upgrading of an existing building to a total enclosure or construction of a new total enclosure. Some facilities will be required to add negative air vented to pollution controls to the total enclosure depending on a facility's proximity to sensitive receptors, schools and early education schools. The annual compliance costs of PR 1430 are estimated to range from $6.0 million to $6.2 million, depending on the real interest assumed (1%-4%). Press Forge, a metal forging facility in Paramount, would bear the largest share of annual compliance costs (14% or approximately $875 K annually based on a 4% real interest) due to the installation of a total enclosure with negative air that is necessary based on proximity to a sensitive receptor, school and early education school.

The proposed rule is expected to result in approximately 46 jobs foregone annually between 2017 and 2035 when a 4-percent interest rate is assumed (approximately 44 jobs with a 1-percent real interest rate). The projected job impacts represent about 0.001 percent of the total employment in the four-county region. The socioeconomic assessment was made available to the public at least 30 days prior the Public Hearing and is included as part of the Public Hearing Package.

Implementation and Resource Impact
Existing SCAQMD resources will be used to implement Proposed Rule 1430.

Attachments
A. Summary of Proposal
B. Key Issues and Responses
C. Rule Development Process
D. Key Contacts List
E. Resolution
F. Proposed Rule 1430 Rule Language
G. Proposed Rule 1430 Staff Report
H. Final Socioeconomic Assessment
I. Final Environmental Assessment
J. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSAL

Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

Prohibition on Outdoor Grinding

- Effective date of rule adoption, metal forging facilities are prohibited from conducting any metal grinding or metal cutting operations in the open

Total Enclosures

- Conduct metal grinding or metal cutting in a total enclosure that minimizes the release of fugitive dust emissions from passage, doorways, and bay doors:
  - No later than 12 months if constructing a new building for total enclosure
  - No later than 6 months if modifying an existing structure to be a total enclosure
  - Conduct additional, enhanced housekeeping measures until total enclosure is completed
- Monthly inspection of total enclosures and conduct repairs within 72 hours; immediate stoppage of work if total enclosure results in fugitive dust emissions
- Total enclosure with negative air required for facilities located:
  - Within 500 feet of a sensitive receptor or 1,000 feet of a school
  - Install no later than 6 months after Permit to Operate issued

Interim Requirements

- Facilities that are currently grinding in the open must conduct metal grinding operations within a temporary enclosure or a building
- Until total enclosures are constructed, additional housekeeping provisions are required

Metal Grinding and Cutting Emission Requirements

- Vent emissions to an emission control device that meets a PM outlet concentration limit of 0.002 grains/dry standard cubic feet
- Final stage of control for emission control devices shall be fitted with filter media rated at a minimum 99.97% control efficiency for 0.3 micron particles (HEPA)
  - Alternatively meet 98% if facility demonstrates lower volume of metal grinding and toxic emissions less than Rule 1401 screening levels
- Emission control devices must meet design and operation standards in order to ensure proper ventilation for capture of emissions
- Conduct metal grinding and metal cutting operations in effective zones of collection

Housekeeping Requirements

- Semi-annual cleaning of roof tops of total enclosures
- Monthly wet cleaning or HEPA vacuuming of floors of a building or total enclosures areas where metal grinding or metal cutting operations occur
- Daily wet cleaning or HEPA vacuuming within 20 feet of metal grinding workstations, entrances/exits of enclosures, and emission control devices
- Storage of all materials capable of generating metal fugitive dust in sealed containers

unless stored in total enclosure
- Prohibition of compressed air cleaning or dry sweeping within 30 feet of metal grinding and cutting operations unless conducted under an emission control device

Source Testing
- Conduct PM emission source test once every 12 months
  - Once every 24 months if most recent source test results show less than 50% of PM emission standard
- Conduct multiple metals and hexavalent chromium source test once every 48 months
  - Can forego hexavalent chromium source testing if all baghouse catch samples at change out show a total chromium concentration of < 1% by weight
- Additional PM, multi-metals, and possibly hexavalent chromium source testing if HEPA monitoring requirements are triggered (See Monitoring for HEPA filter)

Monitoring
- Maintain a Bag Leak Detection System pursuant to SCAQMD Rule 1155
- Measure by static duct pressure of hood once per operating day
- Conduct a smoke test once every 3 months
- Continuously monitor and log pressure changes across the HEPA filter
  - Must conduct additional source tests within 60 days if monitored pressure exceeds acceptable ranges for a 4-hour period on three or more separate days over any consecutive 60 days, or any consecutive 24-hour period

Recordkeeping
- Monthly records of metal waste collected by baghouse and housekeeping activities
- Maintain records of when bags/filters are replaced
- Maintain records of all total enclosure inspections, smoke tests, emission control device inspection and maintenance, housekeeping activities, maintenance and repair activities
- Maintain log of calls received regarding odors or air quality related issues

Signage
- Install facility sign providing contact information for SCAQMD and the facility for the reporting of air quality issues

Odor Contingency Measures
- Implement odor reducing measures after receiving 4 confirmed odor complaints within a consecutive 6-month period:
  - Operational or process changes to reduce odors (within 60 days)
  - Enhancements to a temporary enclosure, building, or total enclosure (within 90 days)
  - Other measures or modifications, approved by the Executive Officer, to reduce or minimize odors (schedule approved by the Executive Officer)

Rule 219 Exemption
- Metal grinding or metal cutting operations and associated emission control devices shall no longer be exempt from requirements of a written permit

ATTACHMENT B
KEY ISSUES AND RESPONSES

Proposed Rule (PR) 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities
Air Pollution Controls Required by PR 1430: A metal forging facility subject to PR 1430 has commented that the cost to install air pollution controls to comply with PR 1430 would be burdensome and potentially result in the facility closing. • SCAQMD staff has conducted a site visit at the facility and met with the facility operator to discuss the provisions of PR 1430 and the need for air pollution controls on metal grinding operations at forging facilities. • The facility is conducting a swing grinding and hand grinding operation outside of a building enclosure with no air pollution controls • SCAQMD staff estimated that the capital cost for the facility to comply with PR 1430 is approximately $340,000. The estimated capital cost for the facility to comply with PR 1430 includes, construction of an enclosure, installation of an air pollution control device, and the purchase of proper housekeeping equipment. • The estimated capital cost for the facility is disproportionately higher than other facilities with similar size metal grinding operations, because, unlike most metal forging facilities the facility's grinding operation is both completely uncontrolled and lacks a building enclosure. If the facility had an enclosure the estimated capital cost would be substantially reduced to approximately $180,000 • Staff's estimated capital cost assumes the facility will construct a new structure. The SCAQMD staff clarified to the facility that it can use an existing structure and upgrade it to meet the total enclosure requirements which can substantially reduce the cost to comply with PR 1430.

ATTACHMENT C

RULE DEVELOPMENT PROCESS

Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities



Thirty-seven (37) months spent in rule development.
One (1) Public Workshop.
Six (6) Working Group Meetings.

***meeting held in Paramount**

ATTACHMENT D
KEY CONTACTS LIST

Advanced Environmental Controls
Alcoa Fastening Systems & Rings
Almega Environmental
Associates Environmental
Beyond by Aerus
The Boeing Company
California Amforge Corporation
California Communities Against Toxics
California Metals Coalition
California Safe Schools
Carlton Forge Works
City of Paramount
Dameron Alloy Foundries
Dodge Oil Company
Environmental Resources Management
Houghton International Incorporated
Independent Lubricant Manufacturers Association
Julia Clabault (Paramount Resident)
KP Public Affairs
Laurie Guillen (Paramount Resident)
Lisa Lappin (Teachers Association of Paramount)
Mattco Forge Inc
MC^2 Environmental Engineering Services
Michele Lewis (Paramount Unified School District)
Office of Senator Ricardo Lara
Press Forge Co.
Ramboll Environ
Sierra Alloys
Solutions 4 Blast
Teachers Association of Paramount
U.S. EPA Region IX
Valley Forge Incorporated
Weber Metals

ATTACHMENT E

RESOLUTION NO. 17-_____

A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) certifying the Final Environmental Assessment (EA) for Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Grinding Forging Facilities.

A Resolution of the SCAQMD Governing Board Adopting Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Grinding Forging Facilities.

WHEREAS, the SCAQMD Governing Board finds and determines that Proposed Rule 1430 is considered a "project" pursuant to the California Environmental Quality Act (CEQA), and that the proposed project would not have a significant adverse effect on the environment; and

WHEREAS, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and has conducted a CEQA review pursuant to such program (SCAQMD Rule 110); and

WHEREAS, the SCAQMD staff has prepared a Draft Environmental Assessment (EA) pursuant to its certified regulatory program and CEQA Guidelines Section 15252, setting forth the potential environmental consequences of Proposed Rule 1430; and

WHEREAS, the Draft EA was circulated for a 30-day public review from January 11, 2017 to February 10, 2017; and

WHEREAS, the Draft EA has been revised to include comments received on the Draft EA and the responses, so that it is now a Final EA; and

WHEREAS, Findings pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091 and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093 were not prepared because the analysis of the proposed project shows that Proposed Rule 1430 would not have a significant adverse effect on the environment, and thus, are not required; and

WHEREAS, it is necessary that the adequacy of the Final EA, including responses to comments received relative to the Draft EA, be determined by the SCAQMD Governing Board prior to its certification; and

WHEREAS, the Board package includes the Final EA and other supporting documentation, and this information was presented to the SCAQMD Governing Board, and that the Board has reviewed and considered the entirety of this information before approving the staff recommendations; and

WHEREAS, the SCAQMD Governing Board voting to adopt Proposed Rule 1430 has reviewed and considered the information contained in the Final EA and other supporting documentation, including responses to comments and has determined that the document has been completed in compliance with CEQA; and

WHEREAS, pursuant to CEQA Guidelines Section 15252 (a)(2)(B), since no significant adverse impacts were identified, no alternatives or mitigation measures are required and thus, a Mitigation Monitoring and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, has not been prepared; and

WHEREAS, the SCAQMD Governing Board voting on Proposed Rule 1430, has reviewed and considered the Final EA prior to its certification; and

WHEREAS, the Final EA reflects the independent judgment of the SCAQMD; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures, that the modifications which have been made to Proposed Rule 1430 since the notice of public hearing was published do not significantly change the meaning of the proposed rule within the meaning of Health and Safety Code Section 40726 and would not constitute significant new information requiring recirculation of the Draft EA pursuant to CEQA Guidelines Section 15073.5 and Section 15088.5; and

WHEREAS, Proposed Rule 1430 is not a control measure in the 2012 Air Quality Management Plan (AQMP) and was not ranked by cost-effectiveness relative to other AQMP control measures in the 2012 AQMP, and furthermore, pursuant to Health and Safety Code Section 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, Proposed Rule 1430 will not be submitted for inclusion into the State Implementation Plan; and

WHEREAS, the SCAQMD staff conducted a public workshop regarding Proposed Rule 1430 on January 19, 2017 and a public consultation meeting regarding Proposed Rule 1430 on January 25, 2017; and

WHEREAS, 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; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430 is needed to further protect public health by reducing metal particulate matter emissions, some of which are toxic, and odors from dry metal grinding and cutting operations at metal forging facilities by prohibiting outdoor grinding and establishing requirements for conducting metal grinding and metal cutting within total enclosures, venting emissions to appropriate pollution control equipment, and conducting housekeeping practices; and

WHEREAS, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Sections 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, and 41700 of the Health and Safety Code; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430, as proposed to be adopted, is written and displayed so that the meaning can be easily understood by persons directly affected by it; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1430, as proposed to be adopted, 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 Proposed Rule 1430, as proposed to be adopted, 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, the SCAQMD Governing Board has determined that Proposed Rule 1430 will alleviate a problem by establishing control requirements

to address particulate matter emissions, which contain some level of toxic metals, from metal grinding and metal cutting operations conducted at metal forging facilities, which is currently an unregulated source and exempt from SCAQMD permitting, and for which most of the affected facilities either have insufficient or no air pollution controls; and

WHEREAS, the SCAQMD Governing Board, in adopting this regulation, references the following statutes which the SCAQMD hereby implements, interprets or makes specific: the provisions of the Health and Safety Code Section 41700 (nuisance) and Federal Clean Air Act Section 112 (Hazardous Air Pollutants) and Section 116 (Retention of State Authority); and

WHEREAS, Health and Safety Code Section 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 Proposed Rule 1430 is included in the staff report; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment of Proposed Rule 1430 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 Proposed Rule 1430 will result in increased costs to metal forging facilities, yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment; and

WHEREAS, the SCAQMD Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment is consistent with the provisions of the Health and Safety Code Sections 40440.8, 40728.5, 40920.6; and

WHEREAS, the SCAQMD Governing Board specifies the Director overseeing the rule development for Proposed Rule 1430 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 Section 40725; and

WHEREAS, the SCAQMD Governing Board has held a public hearing in accordance with all provisions of law; and

WHEREAS, the SCAQMD Governing Board has determined that for metal grinding and cutting operations at metal forging facilities, Proposed Rule 1430 will reduce point source and fugitive metal particulate, some of which are toxic air contaminants by establishing requirements for total enclosures, emission controls, housekeeping, and a prohibition on outdoor metal grinding and metal cutting operations, in addition to helping to reduce odors by requiring grinding within a total enclosure and requires additional odor reducing measures, as needed, through provisions for odor contingency measures of the proposed rule; and

WHEREAS, the SCAQMD has conducted monitoring near Carlton Forge Works and nickel levels decreased as additional measures to reduce grinding emissions were implemented, however, hexavalent chromium levels increased indicating that the source of the hexavalent chromium is not from their grinding operations; and

NOW, THEREFORE BE IT RESOLVED, that the SCAQMD Governing Board directs staff to continue ongoing investigations to identify the source(s) of hexavalent chromium by conducting additional monitoring near Carlton Forge Works; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby certify the Final EA and other supporting documentation was completed in compliance with CEQA; and finds that the Final EA, including responses to comments, was presented to the Governing Board, whose members reviewed, considered and approved the information therein prior to acting on Proposed Rule 1430; and

BE IT FURTHER RESOLVED, that because no significant adverse environmental impacts were identified as a result of implementing Proposed Rule 1430, Findings pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091, a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, and a Mitigation Monitoring and Reporting Plan pursuant to Public Resource Code Section 21081.6 and CEQA Guidelines Section 15097 are not required; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Rule 1430 as set forth in Attachment F and incorporated herein by this reference.

DATE: _____ _____

CLERK OF THE BOARDS

PR 1430
March 3, 2017

PROPOSED RULE 1430 CONTROL OF EMISSIONS FROM METAL GRINDING OPERATIONS AT METAL FORGING FACILITIES

(a) Purpose

The purpose of this rule is to reduce toxic emissions, particulate matter emissions, and odors from metal grinding and metal cutting operations at metal forging facilities.

(b) Applicability

This rule applies to all persons who own or operate a metal forging facility where metal grinding or metal cutting operations are conducted. This rule does not apply to metal grinding or metal cutting conducted under a continuous flood of metal removal fluid, or grinding activities conducted to maintain or repair equipment at the facility.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) BAG LEAK DETECTION SYSTEM means a system that monitors electrical charge transfer based on triboelectric or electrostatic induction to continuously monitor bag leakage and similar failures by detecting changes in particle mass loading in the exhaust.

(2) BILLET means a semi-finished hot rolled, or forged product. The width of a billet is not more than twice the thickness, and the cross-sectional area is about 36 square inches or above.

(3) BILLET GRINDING means metal grinding using (a) travelling grinder(s) designed for billets, which are metal bars, before and after forging.

(4) BUILDING means a type of enclosure that is a permanent structure, completely enclosed with a floor, four walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with openings to allow ingress and egress for people and vehicles.

(5) CAPTURE VELOCITY means the minimum hood induced air velocity necessary to capture and convey air contaminants into an emission collection system.

(6) CONFIRMED ODOR COMPLAINT means an occurrence of odor relating to metal grinding or metal cutting operations resulting in a complaint by different individuals from different households, with the source of the odor having been

verified by District personnel. An individual may only be counted as one confirmed odor complaint per day.

(7) 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.).

(8) EFFECTIVE ZONE means the region in front of the hood that is adequately controlled by the flow of air into the hood.

(9) 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 Governmental Industrial Hygienists, at the time the permit application is deemed complete with the SCAQMD.

(10) EMISSION CONTROL DEVICE means any equipment after the emission collection system for the purposes of collecting and reducing metal-dust emissions from metal grinding and metal cutting operations~~activities~~.

(11) FUGITIVE METAL DUST means any solid particulate matter containing metal that has the potential to become airborne.

(12) HAND GRINDING means metal grinding using a hand tool, including hand powered tools, that prepares, cuts, grinds and polishes or finishes forgings with a disc greater than 1-inch diameter. Examples include angle grinders, internal diameter "I.D." grinders, disc grinders, and side grinders. Hand grinding excludes small part grinding as defined in paragraph (c)(20).

(13) HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA) means filter(s) rated at 99.97% or more efficient in collecting particle sizes 0.3 microns or greater in size.

(14) MAINTENANCE AND REPAIR ACTIVITY means any of the following activities conducted outside of a total enclosure that generates or has the potential to generate fugitive metal-dust:

(A) maintenance or repair activities on any emission control device that vents metal grinding or metal cutting operations; or

(B) replacement or removal of any duct section used to vent metal grinding or metal cutting operations.

(15) METAL means ferrous (iron-based) metals and alloys and non-ferrous (non-iron-based) metals and alloys. Examples of metals include, but are not limited to, iron,

stainless steel, and their iron-based alloys, stainless steel, aluminum, copper, brass, bronze, gold, silver, zinc, tin, lead, platinum, nickel, chromium, cadmium, manganese, tungsten, and titanium and their non-ferrous alloys.

(16) METAL CUTTING OPERATION means a process used to abrasively cut starting ingot, log, or billet stock to length in preparation for the forging process. This does not include plasma cutting or laser cutting.

(17) METAL FORGING FACILITY means any facility that forms and shapes metals through the use of hammering, pressing, or rolling by heating raw stock, usually in the form of ingots, logs or billets, to its plastic deformation temperature and then shaping to a desired shape and size. Metal grinding, metal cutting, and small part grinding operations related to this process are included.

(18) METAL GRINDING OPERATION means billet grinding, hand grinding, stand grinding, swing grinding, and torch cutting. Metal grinding operation does not include small part grinding as defined in paragraph (c)(20), shot peening, and abrasive blasting. Metal grinding operation also excludes hand grinding that is conducted for the purpose of quality control or quality assurance to remove small imperfections on metal parts after they have been processed in a metal forging facility's primary metal grinding operation.

(19) METAL REMOVAL FLUID means a fluid used at the tool and workpiece interface to facilitate the removal of metal from the part, cool the part and tool, extend the life of the tool, and to flush away metal chips and debris, but does not include minimum quantity lubrication fluids used to coat the tool work piece interface with a thin film of lubricant and minimize heat buildup through friction reduction. Minimum quantity lubrication fluids are applied by pre-coating the tool in the lubricant, or by direct application at the tool work piece interface with a fine mist.

(20) SMALL PART GRINDING means metal grinding using a hand tool, including hand powered tools with a disc greater than 1-inch diameter that is used to prepare, cut, grind and polish or finish forging parts with a total surface area less than 25 square inches. Examples include angle grinders, internal diameter "I.D." grinders, disc grinders, and side grinders.

(21) STAND GRINDING means metal grinding using a stand grinder that is usually single speed and used for small castings and light metal removal.

(22) SWING GRINDING means metal grinding using a swing grinder designed with full lateral movement typically used to prepare medium and large billets.

(23) TEMPORARY ENCLOSURE means a structure comprised of a floor, roof, walls and or partitions on at least three sides or three-quarters of the perimeter that surrounds areas where metal grinding or metal cutting operations are conducted.

(24) TORCH CUTTING means metal grinding using a blowpipe by which metal is preheated with a flame and then oxidized rapidly and removed by a jet of oxygen issuing centrally through the preheating flame.

(25) TOTAL ENCLOSURE means a permanent containment 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 breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust.

(d) Total Enclosures

(1) An owner or operator of a metal forging facility is prohibited from conducting ~~any~~all metal grinding or metal cutting operations, or small part grinding outside of a temporary enclosure, building, or total enclosure.

(2) An owner or operator of a metal forging facility shall conduct all metal grinding and metal cutting operations in a total enclosure that minimizes the release of fugitive metal dust emissions from passages, doorways, and bay doors by installing automatic roll-up doors, plastic strip curtains, or vestibules for doors and openings of the total enclosure. Alternative methods to minimize the release of fugitive metal dust from the total enclosure may be used if the owner or operator can demonstrate to the Executive Officer (an) equivalent or more effective method(s) to minimize cross-draft conditions. The total enclosure shall be completed:

(A) No later than [6 months after Date of Rule Adoption] if the owner or operator is conducting metal grinding or metal cutting operations in a building, existing as of [Date of Rule Adoption], that will be modified to a total enclosure to meet the provisions in paragraph (d)(2); or

(B) No later than 12 months after [Date of Rule Adoption], if a new building is constructed to meet the provisions of paragraph (d)(2), provided the owner or operator provides written notice to the Executive Officer within 60 days after [Date of Rule Adoption] that a new total enclosure will be constructed.

(3) Until the total enclosure requirements of paragraph (d)(2) are met, the owner or operator of a metal forging facility shall:

(A) Conduct metal grinding and metal cutting operations in a temporary enclosure or a building.

(B) In addition to housekeeping provisions specified under subdivision (f), conduct the following cleanings by wet cleaning or HEPA vacuum after or at the end of each operating shift:

(i) Floors within 30 feet of a work station or workstations for metal grinding or metal cutting;

(ii) Floors within 40 feet of any entrance/exit point for the temporary enclosure or building; and

(iii) Floors of temporary enclosure or building areas where metal grinding or metal cutting operations occur.

(4) All enclosure types shall be designed in a manner that does not conflict with requirements set forth by the federal Occupational Safety and Health Administration (OSHA) or the California Division of Occupational Safety and Health (CAL-OSHA) regarding worker safety.

(5) The owner or operator of a metal forging facility shall inspect any total enclosure at least once a calendar month for breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust.

(6) The owner or operator of a metal forging facility shall immediately stop metal grinding and metal cutting operations if inspection of a total enclosure where these operations are conducted reveals a break, crack, gap or deterioration which results in fugitive metal dust. The owner or operator may resume metal grinding and metal cutting operations until the total enclosure is repaired pursuant to paragraph (d)(7), if temporary measures are implemented that ensure no fugitive metal dust results from the break, crack, gap or point of deterioration.

(7) The owner or operator of a metal forging facility shall repair any breaks, cracks, gaps, or deterioration that could or results in fugitive metal dust from any total enclosure 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 72-hour time limit has expired, and the owner or operator can provide information to substantiate that either:

(A) the repair will take longer than 72 hours; or

(B) the equipment, parts or materials needed for the repair cannot be obtained within 72 hours.

(8) Total Enclosures with Negative Air

(A) The owner or operator shall vent the total enclosure for any metal grinding or metal cutting operation to an emission control device that meets the requirements of subdivision (e) no later than 6 months after a Permit to

Construct for the emission control device is issued by the Executive Officer if the property line of the facility is:

(i) Within 500 feet of the property line of any residence including private homes, condominiums, apartments, and living quarters; daycare centers; health care facilities such as hospitals or retirement and nursing homes; long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing; or

(ii) Within 1,000 feet of the property line of any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including kindergarten and grades 1 through 12, inclusive; and ~~e~~Early Learning and Developmental Programs as defined by the U.S. Department of Education ~~head start schools, head start schools, and preschools~~. This provision does not apply to any private school in which education is primarily conducted in private homes.

(B) The total enclosure referenced in subparagraph (d)(8)(A) shall continuously meet an in-draft velocity of > 200 feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups no later than 6 months after a Permit to Construct for the emission control device venting the total enclosure is issued by the Executive Officer. 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.

(e) Metal Grinding and Cutting Emission Requirements

(1) The owner or operator of a metal forging facility shall vent emissions from all metal grinding and metal cutting operations to an emission control device no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. The emission control device shall not exceed a PM outlet concentration of 0.002 grains of particulate matter per dry standard cubic foot as determined by the most recent SCAQMD-approved source test conducted on behalf of the facility or the SCAQMD pursuant to subdivision (h).

(2) The final stage of any emission control device required under paragraph (e)(1) shall be fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the

OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

(3) The owner or operator of a metal forging facility may alternatively fit the final stage of any emission control device required under paragraph (e)(1) with filter media rated by the manufacturer to achieve a minimum of 98% control efficiency for 0.3 micron particles if:

(A) the owner or operator does not conduct billet grinding, metal cutting, swing grinding, or torch cutting; and

(B) the owner or operator operates a combination of 10 or fewer hand grinding units or stand grinding stations; and

(C) toxic emissions from the emission control device does not exceed the screening levels identified in Table I – Toxic Air Contaminants in Rule 1401 - New Source Review of Toxic Air Contaminants, or does not result in a risk of over 1 in a million using the most recent SCAQMD Risk Assessment Procedures for Rule 1401.

(4) The owner or operator of a metal forging facility shall operate the emission control device required under paragraph (e)(1) at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD.

(5) No later than [30 days after Date of Rule Adoption], the owner or operator of a metal forging facility shall:

(A) Provide permanent visual indicators or markings at all hand grinding, stand grinding, swing grinding, and torch cutting stations that identify the maximum distance metal grinding may occur from the emission control device to ensure the emission collection system meets the requirements of subdivision (e);

(B) All metal grinding activity shall be in front of the hood face and within the area identified in subparagraph (e)(5)(A); and

(C) The air flow shall not be obstructed between the metal grinding operation and the hood for the emission collection system.

(6) No later than [30 days after Date of Rule Adoption], the owner or operator of a metal forging facility shall remove any weather cap installed on any stack that is a source of metal particulate emissions or install a butterfly valve.

(f) Housekeeping Requirements

Unless otherwise specified, no later than [30 days after Date of Adoption], the owner or operator of a metal forging facility shall implement the following housekeeping practices:

(1) The owner or operator of a metal forging facility that is conducting metal grinding or metal cutting operations shall conduct semi-annual wet cleaning or HEPA vacuuming, no more than 6 calendar months apart, of roof tops for total enclosures that house areas associated with metal grinding or metal cutting operations.

(2) The owner or operator of a metal forging facility that is conducting metal grinding or metal cutting operations or small part grinding, shall conduct daily wet cleaning or HEPA vacuuming of the following:

(A) areas where metal containing wastes generated from metal grinding or metal cutting operations are stored, disposed of, recovered or recycled;

(B) floors within 20 feet of a work station or workstations for metal grinding or metal cutting operations;

(C) floors within 20 feet of any entrance/exit point for a temporary enclosure, building or total enclosure; and

(D) floors within 10 feet of an emission control device dedicated to metal grinding or metal cutting operations.

(3) The owner or operator of a metal forging facility that is conducting metal grinding or metal cutting operations or small part grinding, shall additionally conduct the following housekeeping measures:

(A) Monthly wet cleaning or HEPA vacuuming of floors of a temporary enclosure, building or total enclosure areas where metal grinding or metal cutting operations occur.

(B) Storeing all materials capable of generating any amount of fugitive metal dust including, but not limited to, metal containing waste generated from the housekeeping requirements of this subdivision and the maintenance and repair activities of subdivision (g), in sealed containers, unless located within a total enclosure;

(C) Prohibiting ~~C~~ccompressed air cleaning operations or dry sweeping ~~shall not be conducted~~ within 30 feet of any metal cutting or metal grinding operation, unless the compressed air cleaning operation or dry sweeping is conducted under an emission control device pursuant to subdivision (e).

(g) Maintenance and Repair Activity Requirements

On and after [30 days after Date of Rule Adoption], the owner or operator of a metal forging facility shall implement the following measures when conducting maintenance and repair activities as defined in paragraph (c)(14):

(1) No later than one hour after completion of maintenance or repair activity, the owner or operator of a metal forging facility shall wet clean or HEPA vacuum the floors within 20 feet of where the maintenance or repair activity was conducted.

(2) Maintenance and repair activity shall be stopped immediately when instantaneous wind speeds are $\geq$ 20 mph, unless the activity is being conducted within a building or temporary enclosure. Maintenance or repair activity may be continued if it is necessary to prevent the release of metal particulate emissions.

(3) Wet clean or ~~a~~ HEPA vacuum all metal-contaminated equipment and materials used for maintenance and repair activity immediately after completion of work in a manner that does not generate fugitive metal dust.

(h) Source Tests

(1) Beginning [Date of Adoption], the owner or operator of a metal forging facility shall conduct the following source tests for any emission control device subject to subdivision (e):

(A) a source test for PM emissions once every 12 months to demonstrate compliance with the emission standard specified in subdivision (e), including confirmation of the capture velocity referenced in paragraph (e)(4). If the most recent source test demonstrates 50% or less of the PM emissions standard required under subdivision (e), in which case the next test for PM emissions from that emission control device may be performed no later than 24 months after the date of the most recent test;

(B) a source test for multiple metal emissions once every 48 months; and

(C) a source test for hexavalent chromium emissions once every 48 months. The owner or operator of a metal forging facility shall be exempt from the requirement to source test for hexavalent chromium if a metals analysis by X-ray fluorescence of bulk samples from the baghouse catch demonstrates a total chromium concentration of no greater than 1% by weight. The metals analysis by X-ray fluorescence shall be conducted upon each removal or disposal of the baghouse catch. If a metals analysis by X-ray fluorescence demonstrates a total chromium concentration of greater than 1% by weight, the owner or operator shall conduct a hexavalent chromium emissions source test for the associated baghouse within 60 days of the

analysis, with subsequent tests conducted once every 48 months from the date of the most recent hexavalent chromium emissions test.

(2) The owner or operator of a metal forging facility with an existing, SCAQMD-permitted metal grinding or metal cutting emission control device in operation before [Date of Adoption], shall submit a source test protocol for the initial source test to demonstrate compliance with paragraph (h)(1) to the Executive Officer for approval no later than [60 days after Date of Rule Adoption]. Subsequent source test protocols for source tests conducted after the initial source test shall be submitted to the Executive Officer for approval no later than 90 days prior to the compliance deadline to conduct the next source test to demonstrate compliance with (h)(1). The initial source test protocol may be used for subsequent source tests if there are no changes.

(3) The owner or operator of a metal forging facility with a new or modified metal grinding or metal cutting emission control device with initial start-up on or after [Date of Rule Adoption], shall submit a source test protocol for the initial source to demonstrate compliance with paragraph (h)(1) to the Executive Officer for approval no later than 30 days after initial start-up. Subsequent source test protocols for source tests conducted after the initial source test shall be submitted to the Executive Officer for approval no later than 90 days prior to the compliance deadline to conduct the next source test to demonstrate compliance with (h)(1). The initial source test protocol may be used for subsequent source tests if there are no changes.

(4) Source test protocols required under subdivision (h) shall include the source test criteria of the end user and all assumptions, required data, and calculated targets for testing the following:

(A) Target particulate 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 metal forging facility shall conduct the source tests specified in paragraph (h)(1) no later than 60 days from approval of the source test protocol, unless otherwise approved in writing by the Executive Officer.

(6) If the monitored pressure across the HEPA filter is not maintained pursuant to paragraph (i)(4), the following source tests for the emission control device that triggered the monitored pressure change shall be performed no later than 60 days

after the continuous data acquisition system indicated the pressure across the HEPA filter was not maintained:

(A) a source test for PM emissions;

(B) a source test for multiple metals; and

(C) a source test for hexavalent chromium unless the facility conducts metal analyses pursuant to subparagraph (h)(1)(C) that demonstrate all bulk samples from the baghouse catch are no greater than a concentration of 1% by weight for total chromium.

(7) The owner or operator shall notify the Executive Officer in writing 10 calendar days prior to conducting any source test required by this subdivision.

(8) The owner or operator shall notify the Executive Officer within three business days (Monday through Friday) of when the facility knew or should have known of any source test result that exceeds the emission standard specified in subdivision (e). Notifications shall be made to 1-800-CUT-SMOG and followed up in writing to the Executive Officer with the results of the source tests within seven business days of notification.

(9) Source tests shall be conducted representative of typical operating conditions and in accordance with any of the following applicable test methods:

(A) SCAQMD Method 5.1 – *Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train*

(B) SCAQMD Method 5.2 – *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter*

(C) SCAQMD Method 5.3 – *Determination of Particulate Matter Emissions from Stationary Sources Using an In-Stack Filter*

(D) CARB Test Method 425 – *Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources*

(E) CARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources*

(F) U.S. EPA Method 306 – *Determination of Chromium Emissions from Decorative and Hard Chromium Electroplating and Chromium Anodizing Operations – Isokinetic Method*

(10) The owner or operator may use alternative or equivalent source test methods as defined in 40 CFR 60.2, if approved in writing by the Executive Officer, in addition to the Air Resources Board, or the U.S. EPA, as applicable.

(11) 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~~may be granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.

(12) 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.

(13) Testing conducted by the facility, by the SCAQMD, or by a contractor acting on behalf of the SCAQMD or the facility to determine compliance with this rule shall be performed according to the most recent SCAQMD-approved test protocol for the same purpose or compounds.

(14) Reports from source testing conducted pursuant to subdivision (h) shall be submitted to the SCAQMD in 60 days or less after completion of testing.

(15) The Executive Officer may approve a request for an extension of the compliance deadline date specified in paragraph (h)(1) if the facility can demonstrate that it timely filed a complete source test protocol and associated information, 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 later than 30 days before the compliance deadline date.

(i) Monitoring

(1) Bag Leak Detection System

The owner and operator of a metal forging facility shall apply for a permit to install, operate, calibrate and maintain a Bag Leak Detection System pursuant to SCAQMD Rule 1155.

(2) The corresponding duct static pressure for the minimum hood induced capture velocity specified in paragraph (e)(4) shall be accurately measured once per operating day using the measurement procedures specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Operation and Maintenance*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD, or any more stringent methods required by OSHA or CAL-OSHA. Duct static pressures shall be established or re-verified during the capture efficiency testing specified in subparagraph (h)(1)(A).

(3) The owner or operator of a metal forging facility shall continuously monitor the pressure drop across the HEPA filter of an emission control device for metal grinding or metal cutting operations with a mechanical gauge. The gauge shall be located so that it is easily visible and in clear sight of the operator or maintenance personnel. For the purposes of this requirement, the owner or operator shall ensure that the monitoring device:

(A) Is equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;

(B) Is calibrated according to manufacturer's specifications at least once ~~a frequency of not less than twice~~ every calendar year;

(C) 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) minutes;

(D) Generates a data file from the computer system interfaced with each DAS each calendar day saved in Microsoft Excel (xls or xlsx) 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 4-hour average pressure readings recorded by this device each calendar day; and

(E) Is maintained in accordance with manufacturer's specifications.

(4) If the pressure across the HEPA filter is not maintained within ~~-1/2 times to +2 times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitation for the emission control device based on~~ the range specified in the Permit to Operate for the emission control device as determined by hourly or more frequent recordings by the DAS for the averaging periods below, the owner or operator shall conduct a source test pursuant to paragraph (h)(6).

(A) A 4-hour time period on 3 or more separate days over 60 continuous days; or

(B) Any consecutive 24-hour period.

(5) For each emission collection system subject to this subdivision, confirmation of the capture velocity referenced in paragraph (e)(4) and a periodic smoke test shall be conducted~~,~~ at least once every 3 months using the procedure set forth in Appendix 1 of this rule~~unless performing such test~~. The smoke test need not be

performed if it is demonstrated to the Executive Officer that it presents an unreasonable risk to safety~~, at least once every 3 months using the procedure set forth in Appendix 1 of this rule~~.

(j) Recordkeeping

(1) The owner or operator of a metal forging facility shall keep records of the following, as applicable:

(A) Monthly records of weight of metal waste collected by the baghouse catch, including, if applicable, any metal analyses for bulk samples of baghouse catches conducted pursuant to subparagraph (h)(1)(C);

(B) Monthly records of weight of metal waste collected by housekeeping activities required by subdivision (f);

(C) Records of dates when bags for baghouses, cartridges, or HEPA filters are replaced;

(D) Records of total enclosure inspections required by paragraph (d)(5), periodic smoke tests required by paragraph (i)(4), emission control device inspection and maintenance required by paragraph (e)(5), housekeeping activities required by subdivision (f), maintenance and repair activities required by subdivision (g), including the name of the person performing the activity, and the dates and times at which specific activities were completed; and

(E) Log of reports to the facility regarding odors or other air quality related issues that includes the date, time, name and contact information for the person reporting the issue, source of the issue, how the issue was resolved, and how the issue will be avoided in the future.

(2) For the purposes of paragraph (i)(1), records kept shall include:

(A) Facility name;

(B) Facility representative for maintaining the Baghouse Leak Detection System;

(C) Date and time of routine maintenance and inspections conducted on Bag Leak Detection System;

(D) The date and time of any alarm, including length of the alarm time, and cause of the alarm;

(E) Whether visible emissions occurred;

(F) Total operating hours of the baghouse; and

(G) Any additional information as specified by the Executive Officer.

(3) The owner or operator shall maintain all records required in this subdivision for at least five years and shall be made available to the SCAQMD personnel upon request with at least the two most recent years kept onsite.

(k) Signage

(1) The owner or operator of a metal forging facility shall install a sign no later than [30 days after Date of Rule Adoption] that says, "TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST, OR SMOKE FROM THIS FACILITY, CALL EITHER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG, OR [*FACILITY CONTACT PHONE NUMBER*]" and meets the following requirements, unless otherwise approved in writing by the Executive Officer:

(A) Installed within 50 feet of ~~each~~the main entrance of the facility that is visible to the public, and in a location on each side of the facility that is visible to the public;

(B) Measures at least 16 square feet; and

(C) Displays lettering at least 3 inches tall with text contrasting with the sign background.

(l) Permit Application Submittals for Existing Metal Grinding or Cutting Operations

For metal grinding or metal cutting operations existing prior to [Date of Rule Adoption], the owner or operator shall submit complete permit applications no later than [60 days after Date of Rule Adoption] for all construction and/or necessary equipment required under paragraphs (d)(8) – Total Enclosures with Negative Air, (e)(1) – Emission Control Devices, and (i)(1) – Bag Leak Detection Systems.

(m) Odor Contingency Measures

(1) The owner or operator of a metal forging facility that has been notified by the Executive Officer of four (4) confirmed odor complaints in any consecutive (6) months, shall implement one of the following odor reducing measures specified in subparagraphs (m)(1)(A) through (m)(1)(D):

(A) Operational changes to reduce odors including, but not limited to, changing ingress and egress openings that may affect the release of odors from a total enclosure, moving grinding stations further from openings within the total enclosure;

(B) Process changes to reduce odors including, but not limited to, use of different materials in the grinding element, and materials applied before, during, or after metal grinding or metal cutting operations;

(C) Enhancements to the temporary enclosure, building, or total enclosure to reduce odors escaping the total enclosure including, but not limited to, installation of booths or barriers around grinding stations to contain odors from escaping the total enclosure, upgrade openings used for ingress or egress that will provide even greater control of odors escaping total enclosure; or

(D) Any other measure or modification, approved by the Executive Officer, that can help to reduce or minimize odors emanating from the metal grinding or metal cutting operation shall be implemented on a schedule approved by the Executive Officer.

(2) The owner or operator of a metal forging facility that has been notified to implement an odor reducing measure pursuant to paragraph (m)(1) shall complete implementation of the measure within:

(A) 60 days after notification by the Executive Officer in paragraph (m)(1) for a measure selected under subparagraphs (m)(1)(A) or (m)(1)(B);

(B) 90 days after notification by the Executive Officer in paragraph (m)(1) for a measure selected under subparagraph (m)(1)(C); ~~and~~

(C) 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer for the installation or modification of equipment necessary to implement a measure selected under subparagraphs (m)(1)(A) through (m)(1)(C); and

(D~~C~~) a schedule as approved by the Executive Officer for a measure selected under subparagraph (m)(1)(D).

(3) Within 30 days after completing the implementation of a measure required under paragraph (m)(1), the owner or operator of a metal forging facility shall provide a description of the measure that was implemented and notify the Executive Officer that implementation of the measure has been completed.

(4) The consecutive 6-month period referenced in paragraph (m)(1) shall be restarted upon full implementation of an odor reducing measure specified in subparagraphs (m)(1)(A) through (m)(1)(D).

(n) Rule 219 Exemption

Beginning [Date of Adoption], any equipment subject to this rule and any associated emission control devices shall no longer be exempt from the requirement of a written permit pursuant to SCAQMD Rule 219.

Appendix 1 - Smoke Test to Demonstrate Capture Efficiency for Ventilation Systems of (an) Emission Control Device(s) Pursuant to Paragraph (i)(4).

1. Applicability and Principle

1.1 Applicability. This method is applicable to all point sources where an emission control device is used to capture and control emissions from metal grinding or metal cutting operations.

1.2 Principle. Collection of emissions from metal grinding or metal cutting sources is achieved by the ventilation system associated with the emission control device for metal grinding or metal cutting equipment. Emission control efficiency at the exhaust of an emission control device is related to capture efficiency at the inlet of the ventilation system. For this reason, it is imperative that 100% capture efficiency is maintained. A smoke device placed within the area where collection of emissions by the ventilation system occurs reveals this capture efficiency.

2. Apparatus

2.1 Smoke Generator. The smoke generator shall be adequate to produce a persistent stream of visible smoke (e.g., Model S102 Regin Smoke Emitter Cartridges~~#15-049 Tel-Tru™ T-T Smoke Sticks from E. Vernon Hill, Incorporated~~). The smoke generating device should not provide excessive momentum to the smoke stream that may create a bias in the determination of collection efficiency. If the device provides slight momentum to the smoke stream, it shall be released perpendicular to the direction of the collection velocity.

3. Testing Conditions

3.1 Equipment Operation. Any equipment to be smoke tested that is capable of generating heat as part of normal operation must be smoke tested under those normal operating conditions. Operating parameters of the equipment during the smoke test shall be recorded. The smoke test shall be conducted while the emission control device is in normal operation. The position of any adjustable dampers that can affect air flow shall be documented. Precautions should be taken by the facility to evaluate any potential physical hazards to ensure the smoke test is conducted in a safe manner.

3.2 Cross Draft. The smoke test shall be conducted while the emission control device is in normal operation and under typical draft conditions representative of the facility's metal grinding or metal cutting operations. This includes cooling fans and openings affecting draft conditions around the metal grinding area including, but not limited to, vents, windows, doorways, bay doors, and roll-ups, as well as the operation of

other work stations and traffic. The smoke generator must be at full generation during the entire test and operated according to manufacturer's suggested use.

4. Procedure

4.1 Collection Slots. For work stations equipped with collection slots or hoods, the smoke shall be released at points where metal grinding or metal cutting emissions are generated (e.g. the point where welding or stacking of grids occurs). Observe the collection of the smoke to the collection location(s) of the ventilation system. An acceptable smoke test shall demonstrate a direct stream to the collection location(s) of the ventilation system without meanderings out of this direct path. Smoke shall be released at points not to exceed 12 inches apart across ventilated work areas. Record these observations at each of the points providing a qualitative assessment of the collection of smoke to the ventilation system.

4.2 Equipment Enclosures. Equipment enclosures include equipment where emissions are generated inside the equipment, and the equipment is intended to have inward air flow through openings to prevent the escape of process emissions. The smoke shall be released at points outside of the plane of the opening of the equipment, over an evenly spaced matrix across all openings with points not to exceed 12 inches apart. Observe the inward movement of the smoke to the collection location(s) of the ventilation system. An acceptable smoke test shall demonstrate a direct stream into the equipment without meanderings out of this direct path. Record these observations at each of the points providing a qualitative assessment of the collection of smoke to the ventilation system.

5. Documentation. The smoke test shall be documented by photographs or video at each point that clearly show the path of the smoke. Documentation shall also include a list of equipment tested and any repairs that were performed in order to pass the smoke test. As previously discussed, the documentation shall include the position of adjustable dampers, cross draft conditions, and the heat input of the equipment, if applicable. The documentation shall be signed and dated by the person performing the test. The records shall be maintained on site for at least two years and be made available to SCAQMD personnel upon request.

ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Staff Report
Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

March 2017

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WAYNE NASTRI

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CHAPTER 1: BACKGROUND

INTRODUCTION

BACKGROUND

SAMPLING FROM OTHER METAL FORGING FACILITIES

NEED FOR PROPOSED RULE 1430

PUBLIC PROCESS

INDUSTRY PROCESS DESCRIPTION

METAL GRINDING AND CUTTING CONTROL STRATEGIES

INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) is the lead air pollution agency in the South Coast Air Basin (SCAB) and has jurisdiction over all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SCAQMD performs inspections of more than 27,000 facilities in the Basin, in addition to responding to thousands of public complaints regarding air quality.

Proposed Rule 1430 is designed to reduce emissions from metal grinding and metal cutting operations at forging facilities. Both metal grinding and cutting operations are currently exempt from SCAQMD permits, and as such operations are currently an unregulated source category. Although some of the metal grinding operations have air pollution controls, most are not permitted. The issue of grinding emissions at forging facilities was brought to the attention of the SCAQMD based on community complaints regarding odors and visible emissions near a forging facility in the City of Paramount. Based on investigations, the SCAQMD staff identified fugitive metal particulate emissions from Carlton Forge Works' (CFW) grinding operation and the need to control these emissions. During the development of Proposed Rule 1430, staff visited other metal forging facilities throughout the Basin. Similar to CFW, staff found that other forging facilities lacked necessary pollution controls to manage point and fugitive emissions from their metal grinding and cutting operations. Depending on the metal alloys, some metal particulate can be toxic air contaminants posing a potential health risk to the surrounding community if emissions are not well controlled. Proposed Rule 1430 will ensure metal particulate emissions are appropriately vented to pollution control equipment, fugitive emissions are contained within a building enclosure, and housekeeping measures are implemented to further minimize emissions from metal grinding and metal cutting operations at metal forging facilities.

BACKGROUND

In 2012, the SCAQMD began receiving complaints from the public regarding a burning metallic odor and metal particulate in the City of Paramount. Through air quality analysis and investigation of surrounding businesses, Carlton Forge Works (CFW) was identified as a source of these metallic odors, which arise primarily from their metal grinding operations. CFW manufactures forged high-temperature alloy rings for aerospace, gas turbine, and other industries, using metals such as stainless steel, nickel, titanium, aluminum, cobalt, and iron, as well as other high temperature metals with special properties. CFW operates a large grinding room with 25 grinding booths, each equipped with a handheld air grinder or a swing grinder and vented to one of three pieces of air pollution control equipment (baghouses).

In August 2013, the SCAQMD staff began ambient air monitoring at three locations near of CFW to measure the levels of various metals. Figure 1-1 below shows an aerial map of the three ambient air monitors in relation to the CFW facility and the nearby community. Sites #1 and #2 identified in Figure 1-2 are located on Vermont Avenue and represent exposures immediately downwind of CFW. Site #1 was only active August 2, 2013 through October 1, 2013 due to access limitations. Site #2 and #3 began sampling on August 8, 2013 and October 31, 2013, respectively, and are currently collecting samples as of this writing. The sampling schedules are consistent with many of the toxics air monitoring programs conducted by SCAQMD. The

ambient air monitors measure metals from all nearby sources, including CFW and other metal processing facilities, as well as regional background emissions. Based on a review of the air monitoring results, the two main metals of concern, given their toxicity, were nickel and hexavalent chromium.

Figure 1-1: Aerial Map of Ambient Air Monitoring Downwind Carlton Forge Works in Paramount, CA



Nickel and hexavalent chromium levels from Site #3 were generally consistent with background levels based on SCAQMD's Multiple Air Toxics Study (MATES) IV. Although Carlton Forge Works was conducting their metal grinding operation within a building and had pollution controls, point source controls were not operated properly and large vents and bay doors in the building were not containing fugitive emissions. When monitoring began in 2013, nickel levels at Site #2 were as high as 300 ng/m^3, with an average of about 90 ng/m^3. Nickel levels were elevated in 2013 as shown in Figure 1-2. As CFW implemented a series of voluntary measures to reduce emissions from their grinding operations beginning in late September 2013, nickel levels decreased. Annual average nickel levels are about 16 ng/m^3. Voluntary measures implemented at CFW are summarized in Figure 1-3 below.

Figure 1-2: Nickel (ng/m^3) from Site #2 (30-Day Rolling Average)

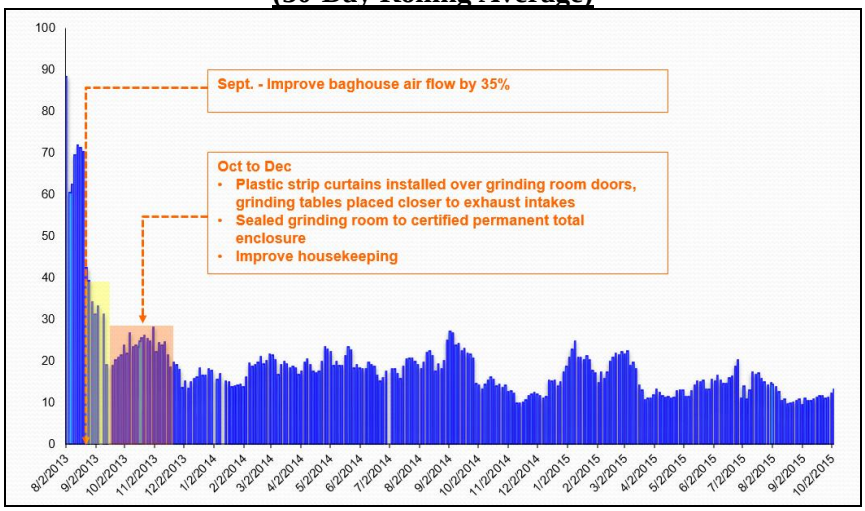
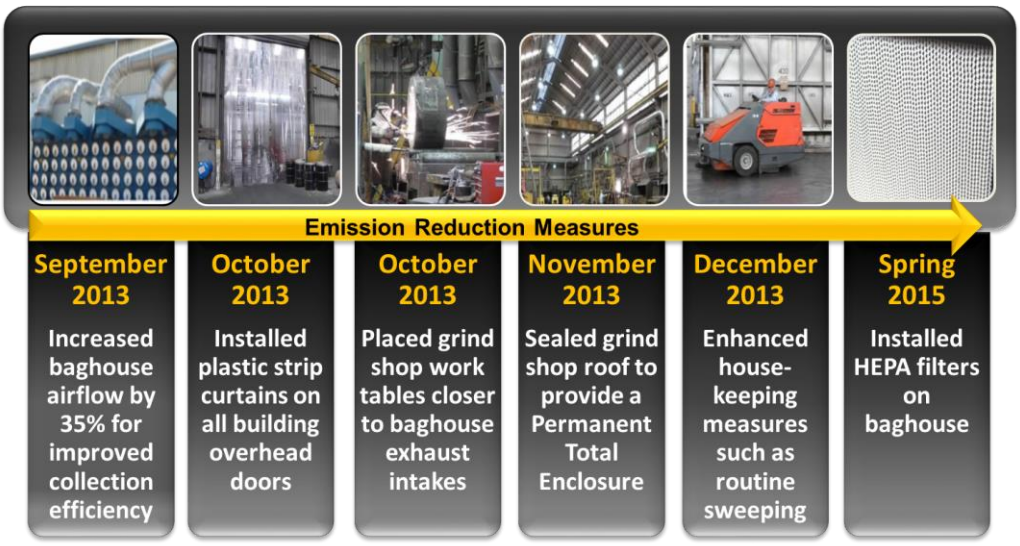


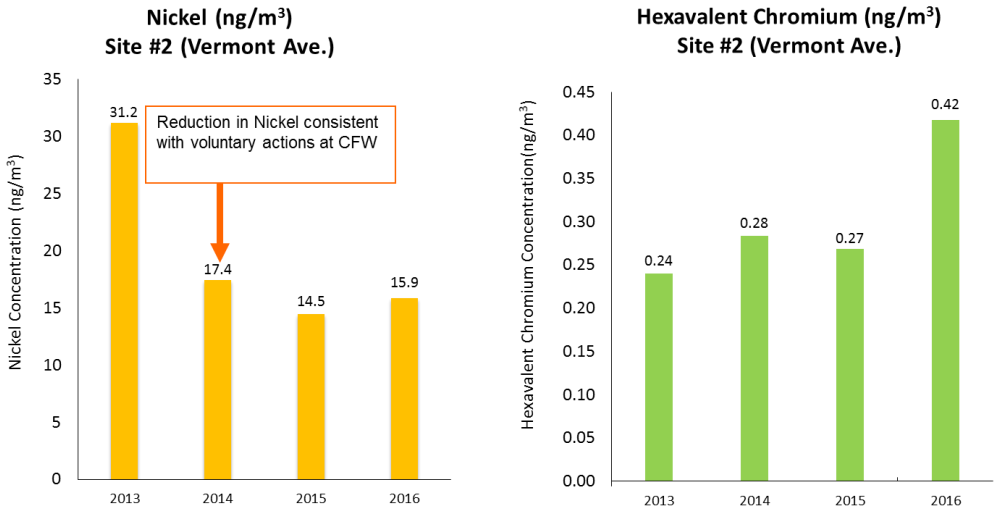
Figure 1-3: Measures Implemented at CFW



As shown in Figure 1-4, average hexavalent chromium levels at Site #2 did not follow the same pattern as the nickel levels. For example, where the nickel levels decreased after 2013, hexavalent chromium levels did not, which indicated that hexavalent chromium could be originating from an operation other than grinding within CFW or possibly a different facility. In addition, in 2016 Site #2 showed an increase in hexavalent chromium levels. As a result, SCAQMD staff began investigating potential sources of hexavalent chromium at CFW as well as other facilities that could be contributing to the increase.

As part of its efforts to understand the hexavalent chromium levels found at Site #2, in October 2016, SCAQMD staff expanded its air monitoring efforts and found elevated levels of hexavalent chromium near CFW that were less than 1 ng/m^3, but still at a level where additional investigation is needed. SCAQMD staff temporarily suspended its investigation near CFW, as resources were needed to address substantially higher levels of hexavalent chromium that were found further south of CFW. The SCAQMD will be resuming the investigation of source(s) of hexavalent chromium near CFW, and if needed, additional controls will be addressed in a future rule development effort. More details regarding air monitoring near CFW and in the City of Paramount can be found at: http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities.

Figure 1-4:
Average Nickel and Hexavalent Chromium Levels (ng/m^3) at Site #2



SAMPLING FROM OTHER METAL FORGING FACILITIES

In addition to the sampling and monitoring done at Carlton Forge Works, SCAQMD staff conducted glass plate sampling on-site at Press Forge, Weber Metals, Inc. and Schlosser Forge. Glass plates are typically left at location for a period 7 consecutive days. Although the deposition plate results cannot determine ambient concentrations, they provide a good indication of gradients and the extent of potential off site impacts. Glass plates sampling was conducted at Schlosser Forge, Press Forge, and Weber Metals, Inc. in May 2014.

Glass plates were placed near buildings or roof tops where grinding operations were occurring to collect metal particulate. The results of the glass plate samples showed that PM concentrations from the three other forging facilities were as substantial or more substantial, than the PM concentrations found at CFW prior to implementing measures to reduce emissions from their grinding operation. The glass plate samples also confirmed the presence of a variety of metal particulates, some of which are toxic such as arsenic and nickel. The glass plate samples also showed the presence of chromium, but did not distinguish the type of chromium such as hexavalent or trivalent chromium.

The mass concentrations of metals observed at Weber Metals, Inc. and Press Forge demonstrated similar results to CFW. All three sites had significant mass concentrations of heavy metals. The highest concentrations were detected on the roof of Press Forge's grinding station where outdoor grinding with no pollution controls were occurring. In late 2016, Press Forge moved their grinding operations in a temporary enclosure with pollution controls. Weber Metals also had high concentrations of heavy metals with values exceeding those measured at CFW. The presence of heavy metals, some of which are toxic air contaminants, in high concentrations at other metal forging facilities indicate that fugitive metal particulates were not exclusive to grinding operations at CFW. High concentrations of nickel were found near the pollution control

equipment at Schlosser Forge, indicating that metal particulate was escaping the baghouse and inadequate operation and maintenance of the pollution controls for the grinding room.

Figure 1-5:
Glass Plate Sampling at Metal Forging Facilities (2014)

	Location Description	As	Ba	Ca	Cd	Co	Cr	Cu	Fe	K	Mn	Mo	Ni	Pb	Sb	Sn	Sr	Ti	V	Zn
Carlton Forge	Roof of grinding room	6.81	418	18,500	2.12	555	607	665	35,300	6,220	430	217	3,340	89.8	7.98	33.1	181	2,320	134	1,300
	West side of roof of saw bldg	6.98	491	19,300	2.37	761	815	815	33,500	7,260	449	287	4,500	130	9.71	31.9	205	2,390	130	1,330
	East side of roof of saw bldg	7.09	521	18,000	2.43	556	661	624	26,200	6,870	391	279	3,620	94.3	9.53	31.2	215	2,470	118	1,500
	Roof of Residence across street from facility	7.63	547	21,700	1.99	258	358	746	27,100	7,690	438	149	1,750	133	10.3	42.8	185	2,290	96.8	1,270
	Top of fence along perimeter of parking lot	8.29	583	20,700	1.51	146	234	271	28,200	8,810	470	89.8	1,020	99.6	14.3	30.7	207	2,120	82.1	1,140
Weber Metals	Site #1 Roof of Bldg O	16.3	513	34,400	1.66	17.1	98.4	450	28,000	12,000	467	37.3	172	91.2	9.24	20.4	229	2,730	302	1,720
	Site #2 Open area next to tracks	17.4	2,370	35,100	1.39	17.6	160	578	71,500	12,500	637	35.5	215	98.7	6.92	21.8	272	2,720	237	1,630
	Site #4 Top of Transformer at North perimeter of facility	10.5	453	29,500	1.89	18.7	310	731	42,300	7,200	454	163	862	100	10.9	74.3	241	8,710	568	2,110
	Site #5 Roof of Bldg P	9.62	521	28,600	1.53	20.9	224	632	36,100	9,160	606	67.2	508	99.8	8.54	35.1	204	12,500	736	1,790
	Site #6 Top of Patio adjacent to Bldg L	6.98	575	31,100	2.37	13.5	86.8	654	27,700	7,060	398	23.8	151	211	87.5	89.8	184	1,850	75.8	2,080
	Site #7 Roof of storage shed at Promise Hospital	18.3	495	14,300	3.14	48.9	1,990	997	161,000	6,690	1,130	995	5,810	89.3	12.1	77.6	167	10,200	683	864
Press Forge	Site #1 Roof of outside grinding station	6.61	59.3	5,780	4.67	1,340	5,070	722	194,000	1,710	1,190	1,640	18,200	15.3	0.08	6.1	63.3	7,150	774	154
	Site #2 Roof of larger outside grinding station	8.46	38.2	3,080	6.53	791	5,140	786	197,000	1,010	1,230	2,290	18,600	14.7	0.15	7.7	51.5	7,030	919	81.1
	Site #3 Adjacent to Forge Building	12.5	333	17,200	2.4	60.1	1,170	364	116,000	4,980	835	634	4,110	55.2	5.4	85	153	9,770	794	746
	Site #4 Adjacent to 2nd Forge Building	9.65	481	20,600	2.6	36.2	224	247	39,100	8,570	532	125	757	618	9.3	503	183	2,840	136	1,170
	Site #5 North Perimeter of facility	9.73	527	20,300	3.26	31.3	181	437	32,700	7,910	473	55.1	430	414	10.3	18	179	2,510	109	1,150
	Site #6 Adjacent to Eng Building	11.2	344	19,900	2.64	34.1	711	292	79,400	5,650	707	380	2,730	81.3	6.9	62	164	6,220	440	894
	Site #7 Storage shed at Promise Hospital	13.9	430	20,400	3.66	83.2	1,260	468	105,000	7,070	838	769	4,340	70	8.6	112	184	9,510	643	769
Schlosser	Admin Bldg roof	38.4	591	25,062	3.4	329	574	641	44,791	7,607	1133	667.8	2040	106.4	12.2	31	189	1,965	85.02	1,884
	Roof of container adjacent to bldg 4	15.3	450	27,871	4.35	1797	2785	635	59,792	6,288	1170	1505.7	12434	90.78	5.33	20.2	181	2,716	142.9	1,861
	Southeast end of grinding room	20.5	444	25,233	2.65	1072	774	503	36,556	6,027	1084	527.36	7277	107.1	9.97	21.5	213	2,073	99.48	1,751
	Southeast end of grinding room adjacent to emission contr	12.2	248	14,636	4.46	8657	6983	371	27,754	3,531	546	2195.6	58462	48.88	3.81	9.37	148	2,661	149.4	1,035
	On top of modular between bldgs 2 and 3	11.2	243	19,163	3.74	4540	3742	483	34,852	3,631	599	1758.1	31059	46.04	2.3	10	124	1,988	148.3	1,477

NEED FOR PROPOSED RULE 1430

Metal grinding and metal cutting operations are currently exempt from permitting by the SCAQMD and is currently an unregulated source. Through the rule development process, the SCAQMD has obtained additional information about metal grinding and metal cutting operations at forging facilities. SCAQMD staff found similar and in most cases lesser pollution controls for metal grinding operations at other forging facilities as compared to Carlton Forge Works. ~~As a result, s~~Some facilities are currently conducting metal grinding and metal cutting operations with no pollution controls. Other facilities that have pollution controls, are not properly operating and maintaining their pollution controls. During the rule development process, SCAQMD staff has visited many of the forging facilities that will be subject to Proposed Rule 1430. The following are key findings from the site visits:

- Prior to November 2016, there were four facilities that were conducting metal grinding operations in the open air. Because of the fugitive nature of grinding operations, with no containment structure such as an enclosure and no air pollution control device, the metal particulates were being released in the open air and into the community. One of the three facilities recently moved their grinding operations within a building enclosure and is in the process of constructing a total enclosure. Another one of the facilities is in the process of moving their grinding operations within an enclosure also.
- Although air pollution controls were not previously required by the SCAQMD, 14 forging facilities currently have some type of air pollution control device. However, many baghouses did not appear to have proper ventilation, operation, and maintenance of pollution controls. Evidence that there were issues with the existing pollution controls was that the metal particulates during the grinding operations were not moving towards the control equipment, visible emissions were escaping the ventilation equipment, glass plate samples near the control equipment showed high levels of metal particulate.

- Most of the facilities that are currently conducting grinding operations within a structure have large openings for ingress and egress, and large vents and openings on the sides and top of the building and/or the structure is not well maintained and does not adequately contain fugitive metal particulate.
- Housekeeping measures varied at each facility. There was variation in the cleaning method, such as using brooms to mobile vacuum sweepers, variation in the frequency, and variation in the areas cleaned, such as cleaning the inside and/or outside.

The general action of metal grinding is prone to generate fugitive metal particulate, particularly if the grinding operation is not properly controlled. Similar to Carlton Forge Works other metal forging facilities subject to Proposed Rule 1430 process titanium, aluminum and/or high nickel alloys all of which contain some level of toxic metals. Given that these alloys contain some level of toxic metals, and that many of the facilities subject to Proposed Rule 1430 lack sufficient pollution controls, it is expected that similar and possibly higher PM and toxic metal levels are emitted from other forging facilities when compared to Carlton Forge Works. Some facilities operate more intense types of grinding operations, such as billet grinding, while others conduct swing and hand grinding operations like Carlton Forge Works.

Proposed Rule 1430 is needed to reduce metal particulate emissions from metal grinding and metal cutting operations at metal forging facilities to ensure that these operations have the appropriate pollution control equipment, are conducted within an enclosure to ensure fugitive emissions that do not make it to the control device are contained, and basic housekeeping requirements are followed to ensure any accumulation of metal particulate in around grinding operations is not re-entrained into the air or tracked outside of the facility. Given that all metal facilities subject to the proposed rule process alloys that contain some level of toxic metals it is expected that Proposed Rule 1430 will concurrently reduce toxic metal particulate.

PUBLIC PROCESS

PR 1430 is being developed through a public process. A working group has been formed to provide the public and stakeholders an opportunity to discuss important details about the proposed rule and provide the SCAQMD staff with important input during the rule development process. The working group and interested parties are comprised of a variety of stakeholders including representatives from industry, consultants, environmental groups, community groups, and public agency representatives. The SCAQMD staff has held six~~five~~ (6~~5~~) working group meetings. To date, the working group has convened on October 7, 2015, September 14, 2016, October 26, 2016, December 1, 2016, ~~and~~ January 11, 2017, and February 1, 2017. At the request of community representatives, the September and December working group meetings were held in the City of Paramount. A Public Workshop was held on January 19, 2017 to present the proposed rule and receive public comment. Additionally, a Public Consultation meeting was held on January 25, 2017 in the City of Paramount in a format similar to the Public Workshop.

INDUSTRY PROCESS DESCRIPTION

The following paragraphs provide a general overview of the manufacturing processes and emission sources for the industry source category subject to Proposed Rule 1430. Specifically, SCAQMD staff has provided general operation and emissions source information for metal forging.

Industry Process Description – Metal Forging and Billet Cutting

Forging is a manufacturing process where metal is pressed, pounded, or squeezed under great pressure into high strength parts known as forgings. The process is normally performed hot by preheating the metal to a desired temperature before it is worked. Any metal can be forged, however, some of the most common metals include, carbon steel, alloy steel, stainless steel, very hard tool steels, aluminum, titanium, brass, copper, cobalt, nickel, and molybdenum. These metals are found in billets or ingots that are delivered to the respective forging company. The forging industry is composed of plants that: make parts to order for customers (custom forgings), make parts for their own company's internal use (captive forgings), or make standard parts for resale (catalog forgings). Metal forging creates parts that vary in size, shape, and sophistication. Some of the largest customer markets include: aerospace, national defense, automotive, oil industry, agriculture, construction, and general industrial equipment. The applicable NAICS code for these industries are 332111, Iron and Steel Forging, and 332112 Nonferrous Forgings. The following process description reflects the operational characteristics at metal forging facilities.

Process Description

Metal forging is done because it strengthens the material by sealing cracks and closing empty spaces within the metal. The hot forging process will highly reduce or eliminate inclusions in the forged part by breaking up impurities and redistributing their material throughout the metal work. Forging a metal will alter the metal's grain structure creating a material of increased strength. This makes forging more advantageous than casting or machining. In metal forging operations, a metal ingot or billet is prepared to be the correct pre-dimensions prior to going through forging. This can include cutting, sawing, grinding, or torch cutting.

Preparation for Forging

Billet Cutting or Sawing

A processed metal billet or ingot is received by the metal forging facility. In order to forge the piece of metal, the metal forging facility may need to reduce the size. This is done by cutting or sawing. At the metal forging facility, the unprocessed metal billet or ingot is place in a sawing machine. The sawing machine is equipped with a blade capable of cutting into a metal billet or ingot at a slow rate. Typically, a continuous flow of metal removal fluid and coolant is supplied where the blade makes contact with the metal. This helps maintain the blade at a cooler temperature with a co-benefit of preventing metal emissions. The metal ingot or billet is cut to the desired dimensions.

Metal Grinding Operations

Irregularities observed on the billet or ingot can be removed via grinding which will create the desired finish and dimensions prior to forging. Based on site visits to the forging facilities, SCAQMD staff identified five categories of metal grinding activities: billet grinding, swing grinding, stand grinding, large and small part grinding, and torch cutting. Based on observations, all of these activities have the ability to generate fugitive metal particulate if not properly controlled. Each of these metal grinding activities are discussed below.

- *Billet grinding*
  Billet grinding consists of large traveling grinders designed to prepare large billets prior to forging. The billet grinder would traverse the entire length of the billet, going back and forth to create the appropriate dimensions. All billet grinders subject to PR 1430 are vented to baghouses without HEPA filters.

- *Swing grinding*
  Swing grinders are rugged, heavy duty grinders with full lateral movement to prepare medium sized billets. An employee manually operates them. Multiple levels of control were observed ranging from a baghouse with HEPA filters to no air pollution controls.



- *Stand grinding*
  Stand grinders are designed for smaller castings and forging. Mounted in a permanent position, utility grinders have a slotting wheel on one end for reaching into recesses of the material. Multiple levels of controls were observed ranging from venting to a baghouse to not venting to any air pollution controls.



- *Large and small grinding*
  Hand grinding involves using power tools used for preparing, cutting, grinding, and polishing forgings of various sizes. Multiple hand grinding stations can be in one room or one area. Larger forgings utilize larger hand grinders, while smaller forgings utilize smaller hand grinders.



- *Torch Cutting*
  Torch cutting is a process by which metal is preheated with a flame and then oxidized rapidly and removed by a jet of oxygen issued centrally through the preheating flame. Torch cutting in the metal forging industry often occurs using acetylene gas and is used to remove flash (excess metal) from large metal parts that have been forged.

  Basic torch cutting equipment consists of two high-pressure cylinders (one apiece for oxygen and acetylene) and two corresponding pressure regulators. A dual-line hose transfers oxygen and acetylene from the regulators to the torch handle. The torch handle can hold a cutting attachment or cutting tip that controls the thickness of metal being cut, along with the gas pressures set at the regulators. Torches that use oxygen and acetylene reach a working temperature of 5,620 degrees F.

- Heating
  Metal billets or ingot are heated to the desired temperature prior to and/or during the forging process. The heated metal billet or ingot become malleable and are able to be forged. Aluminum alloys are heated to 800 °F, while titanium and nickel are heated to temperatures between 1700 and 2300 °F. Furnaces range in heating capacity and size, and typically use

natural gas for heating. The combustion of natural gas produces NOx, SOx, and combustion related PM emissions. The furnaces are regulated under SCAQMD permit process and are evaluated by SCAQMD staff. NOx is regulated by SCAQMD Rule 1147: NOx Reductions from Miscellaneous Sources for non-RECLAIM facilities. Facilities with NOx emissions that exceed more than 4 tons per year can participate in the SCAQMD RECLAIM program. Non-combustion related emissions, such as emissions generated in the oven space of the furnace produced as a result of refractory brick decomposition or off gassing of metals are unknown at this time. Further studies of non-combustion related emissions from metal furnaces are needed.

- Forging

  Forging includes pressing, hammering, rolling, or piercing of metal using a mechanical tool. The type of forges discussed herein are drop forge press, hammer press, and ring rollers. During the forging process, a lubricant is applied to facilitate the release of die and forging material.

  - *Drop Forge*

    It is a forging made in a closed or impression die under a drop or steam hammer. A closed die forging is formed to the required shape and size by machined impression in specifically prepared dies that exert three-dimensional control on the workpiece. Excess metal, known as flash, that did not form in the die will be removed in finishing operations. Open die forging involves the repeated striking of metal in a die to get the desired dimension. The metal piece may be rotated or moved around to get the desired shape.

  - *Hammer Press*

    It is a forging made by means of a hammer. The action of the hammer is that of an instantaneous application of pressure in the form a sudden blow.

  - *Ring Rollers*

    A metal ring preform is rolled between two rolls that move toward each other to form a continuously reducing gap.

  - *Lubricant*

    A liquid or power lubricant is applied to facilitate the release of the die and forged metal. The lubricant can be applied multiple times depending on the forging operation. Visible emissions are observed when lubricants contact the die and forged metal. VOC levels in lubricants are regulated by Rule 1144 - Metalworking Fluids and Direct-Contact Lubricants. Similar to non-combustion emissions from the furnace, emissions from heated process need further study.

Finishing Operations

Following the creation of a forging, physical or chemical methods are utilized to produce dimensional corrections to the forging or perform surface treatment. While preparation operations removed irregularities, finishing operations removed flashing and scale deposits. Methods observed include abrasive blasting, buffing/polishing, sawing and cutting, and grinding.

- Abrasive Blasting
  It is a stream of abrasive material that is propelled against a surface under high pressure to alter the surface. The abrasive material can be composed of metal, silica, or other material. The abrasive blasting process is used to smooth or "clean" forged material. Fugitive metal particulates from the forging and shot material may be generated if not adequately controlled. These emissions can be controlled by operating in a blast cabinet or room vented to an air pollution control system. Varying housekeeping measures can be implemented to reduce the accumulation of particles that can become fugitive. SCAQMD permits are required if the volume of the blasting cabinet is greater than 53 ft^3. Abrasive blasting is regulated under SCAQMD Rule 1140: Abrasive Blasting.

- Sawing Cutting
  It is used to remove portions of forged metal that is not desired in the finished product. This can be flash material or parts of the forging that may be needed to be corrected to meet the correct dimensions.

METAL GRINDING AND CUTTING CONTROL STRATEGIES

The key emission release points for metal forging facilities' metal grinding and cutting operations are point source emission stacks and fugitive emissions. PR 1430 looks to minimize and control these emissions. Uncontrolled grinding or cutting done in the open air is of greatest concern. Emissions are generated at the point of contact where the abrasion or removal of metal occurs. Metal particulates get entrained in the air and are dispersed based on fall-out and dispersion patterns. Additional metal particulates accumulate in metal removal areas. Metal particulates can be tracked out from foot or vehicular traffic. An effective air pollution control system has an effective capture efficiency and effective control technology. Enclosures and capture technology impact the capture rate.

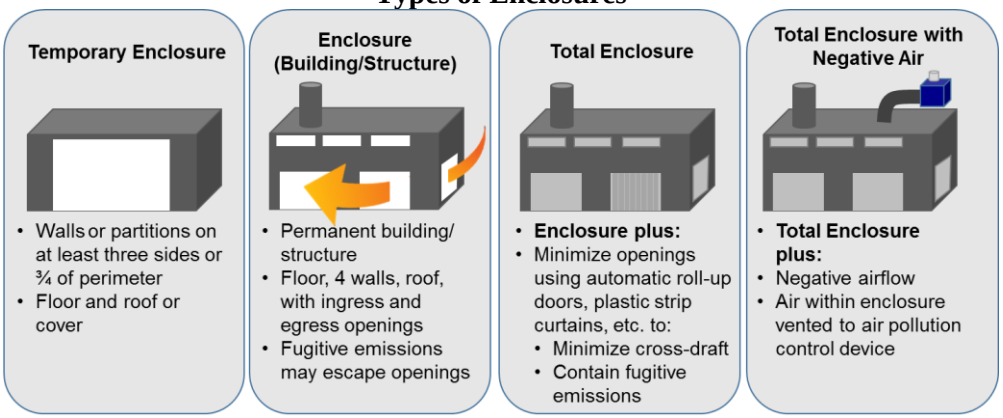
Containment and Collection Strategies

Containment – Enclosures are structures that contain a grinding or cutting operation that can prevent or control the generation of fugitive metal dust. The design of the structure can determine the effectiveness of the enclosure and the collection efficiency of any downstream air pollution control devices. Figure 1-7 shows four types of enclosures: Temporary Enclosure; Building; Total Enclosure; Total Enclosure with Negative Air. The following provides a general description of each of these enclosure types.

- A temporary enclosure is a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter that has a floor and a roof. As shown in the figure below, one side of the structure may be open.
- A building is a type of enclosure that is a permanent containment structure, completely enclosed with a floor, four walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, and run-off), with openings to allow ingress and egress for people and vehicles.
- A total enclosure is a permanent containment structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, and run-off), with limited openings to allow access and egress for people and vehicles, that is free of breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust.

- A total enclosure with negative air that is vented to pollution control equipment is a total enclosure with negative airflow. This total enclosure must meet the industrial ventilation guidelines at each opening and the air within the enclosure is vented to an air pollution control device.

Figure 1-6:
Types of Enclosures



Collection – A collection system allows air and PM emissions to be collected. Designing the air pollution control equipment with ventilation consistent with the Industrial Ventilation Guidelines ensures that the metal particulate is being properly captured and delivered to the pollution control equipment. The collection system can target an emission point, such as a grinding station, or can be for the entire volume of the enclosure. The collection system consists of an intake port, ducting, and a device that creates the target to be under negative air. The collection system needs to be properly maintained in order to maintain expected capture efficiency, which includes proper intake flow rate, duct integrity, and proper positioning of the grinding activity to the intake vent.

Point Source Emission Control Technologies

Baghouses, cyclones, electrostatic precipitators, and wet scrubbers are technologies typically used to control PM emissions from processes. These technologies can be connected in series to further control PM emissions and reduce the wear and tear on downstream processes. A bag leak detection system (BLDS) monitors the performance of baghouse functions by detecting early bag leak or malfunction.

- Baghouses

  Baghouses used for metal grinding and metal cutting operations at metal forging facilities function like a vacuum cleaner with a fan either blowing air from the grinding source through (positive pressure) the filter or drawing air into (negative pressure) the filter. In either case, air pressure is required to force the air through the filter. The pressure drop is a measurement of this difference in pressure between the clean and dirty sides of the filter. Static pressure gauges can be installed at the inlet and outlet of the fabric filter to determine the unit's pressure drop. As the filter medium becomes clogged with metal dust there is more resistance to air flow, resulting in an increased pressure drop. A baghouse consists of the following components: filter media (for example, fabric, etc.) and auxiliary equipment such as the following; filter media housing, filter cleaning device, collection hopper (metal dust collection drum), and fan. Metal dust layers (dust cakes) deposited on the surface of the bags

need to be cleaned periodically to prevent excessive increases of pressure drops across the baghouse, which could result in bag leaks and improper baghouse function.

Baghouses are typically cleaned in sections, with jets of counter-flowing air used to blow captured dust off the filter and into a hopper. For many baghouses installations, the baghouse follows a routine cycle with the pressure drop increasing as the bag becomes coated with dust, and dropping back to a baseline value after it is cleaned. Pressure drop measurements determine if the filter media is being properly cleaned and whether the baghouse is operating to manufacturer specifications. Increased pressure drops may indicate that the filter media is becoming clogged by debris and indicate ineffective capture and control of PM emissions. Low pressure drop values may indicate holes in the filter media or a mechanical failure of baghouse components that also result in ineffective capture and control of PM emissions. Pressure drop monitoring coupled with a bag leak detection system is a useful indicator of baghouse performance. Common types of baghouses include reverse-air, pulse-jet and cartridge type baghouses. A reverse air-type baghouse uses a low pressure flow of air to break the dust cake and clean the bags of material build-up. Cleaning air is supplied by a separate fan which is normally smaller than the main stream fan, since only one compartment is cleaned at a time. A pulse jet-type baghouse uses a high pressure jet of compressed air to back-flush the bags. Cleaning is performed while the baghouse remains in operation. Cartridge (cylindrical) type filters have pleated, non-woven filter media supported on a perforated metal cartridge. Due to its pleated design, total filtering area is greater than in a conventional bag of the same diameter, resulting in reduced air-to-cloth ratio, pressure drop, and overall collector size. Too heavily loaded cartridges can either be cleaned by a pulse jet compressed air or replaced with new cartridges. Cartridge type filters have high particle collection efficiency of, at a minimum, 99.9 percent, and are usually used for industrial process handing exhaust gas flow rates less than 50,000 cubic feet per minute.

The National Fire Protection Association has special designations for deflagrations from metal dust. Therefore, metal grinding operations that require baghouse emission control technologies choose reliable, economical and effective means of explosion control such as baghouse explosion suppression, containment and venting. Additional information pertaining to these types of protective measures is available in Chapter 8 of the Industrial Ventilation, A Manual for Recommended Practice for Design 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

- HEPA Filters

  HEPA filters are classified by their minimum collection efficiency. In general HEPA filters are defined as having a minimum efficiency rating of 99.97% for the removal of 0.3 µm diameter or larger of PM. HEPA filters are best applied in situations where high collection efficiency of submicron PM is necessary, where toxic and or hazardous PM cannot be cleaned from the filter or where the PM is difficult to clean from the filter. 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.

HEPA filters are generally installed as the final component in a PM collection system downstream from other PM collection devices such as a baghouse. HEPA filters require pre-filters to remove large PM for dust concentrations greater that 0.03 grams per centimeter squared (g/cm^2) or 0.06 pounds per feet squared (lbs/ft^2). In metal grinding applications at forging facilities, mechanical collectors (e.g., cyclones or venturi scrubbers), standard baghouse or cartridge filters may be required to reduce larger diameter PM. Some existing metal grinding operations at forging facilities in the South Coast Air Basin vent to HEPA filters, where, the HEPA filters serve as the final component in a PM collection system downstream from a baghouse.

- Cyclone

  A cyclone, typically used as a pre-cleaner, does not have a blower mounted or connected to induce the particle-laden exhaust stream. Particles in the gas stream are forced to move toward the cyclone walls by the centrifugal force of the spinning gas. Large particles are removed from the gas stream by inertia and small particles may travel along the gas stream out of the cyclone.

CHAPTER 2: SUMMARY OF PROPOSED RULE 1430

OVERVIEW

PROPOSED RULE 1430

OVERALL APPROACH

Proposed Rule 1430 establishes requirements for all metal forging facilities to reduce fugitive metal emissions coming from metal grinding and metal cutting operations. The requirements include the installation and implementation of point source controls at grinding operations, construction and maintenance of a physical containment, and implementation of housekeeping measures. Point source controls are air pollution control devices that contain or filter metal particulate at grinding operations. Physical containments capture fugitive emissions that are not captured by the point source controls. Instead of particulate being entrained in the air, particulate matter remains in the containment until it is cleaned up. Appropriate housekeeping measures require the cleanup of metal particulate that lands on surfaces in and around facility before it becomes airborne. Due to the variety of control technologies implemented prior to the adoption of PR 1430, interim requirements are established to allow affected facilities time to install and implement the required technology. It should be noted that PR 1430 applies to a previously unregulated source.

PROPOSED RULE 1430

The purpose of PR 1430 is to reduce particulate matter, toxic emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. As previously discussed, metal grinding and cutting operations are currently exempt from SCAQMD permits and are unregulated sources. PR 1430 will establish standards for metal grinding and cutting options for both point sources and fugitive emission sources. Point sources are addressed through requirements for emission control devices, emission standards, and periodic monitoring. Fugitive particulate emissions are addressed through requirements for total enclosures, housekeeping, and maintenance and repair activities. Additionally, signage, reporting, and recordkeeping requirements are also being proposed to ensure compliance, along with contingency odor measures that would be implemented if there are 4 confirmed odor complaints received within a consecutive six month period.

Purpose and Applicability – Subdivision (a) and (b)

PR 1430 applies to metal forging facilities in the SCAQMD that conduct metal grinding or cutting operations onsite. The proposed rule does not apply to metal grinding or cutting operations that are conducted under a continuous flood of metal removal fluid, or grinding activities conducted to maintain or repair equipment at the facility. Based on SCAQMD staff site visits and analysis of compliance and permitting data, there are currently 22 facilities in the District that have been identified to meet the applicability of the proposed rule. These facilities located in the Basin typically support the aerospace industry and represent a stationary source category where metal grinding and cutting operations are an integral part of the facility's process. Additionally, as discussed in Chapter 1, data from SCAQMD monitors near Carlton Forge Works and glass plate collection samples at other metal forging facilities have shown that metal grinding and metal cutting operations contribute to ambient levels offsite and to the surrounding community. After the implementation of voluntary emission reduction controls at Carlton Forge Works, significant reductions of various metals, particularly nickel were observed.

Definitions – Subdivision (c)

PR 1430 includes definitions of the following terms used in the proposed rule. Please refer to subdivision (c) of PR 1430 for the definitions:

- Bag Leak Detection System
- Billet
- Billet Grinding
- Building
- Capture Velocity
- Confirmed Odor Complaint
- Duct Section
- Effective Zone
- Emission Collection System
- Emission Control Device
- Fugitive Metal Dust
- Hand Grinding
- High Efficiency Particulate Arrestors (HEPA)
- Maintenance and Repair Activity
- Metal
- Metal Cutting Operation
- Metal Forging Facility
- Metal Grinding Operation
- Metal Removal Fluid
- Small Part Grinding
- Stand Grinding
- Swing Grinding
- Temporary Enclosure
- Torch Cutting
- Total Enclosure

Requirements

Subdivisions (d) through (n) establish requirements for enclosures, point source emission limits for particulate matter, filter media for final stage emission controls, source testing, housekeeping measures, maintenance and repair activities, monitoring of emission control devices, recordkeeping, signage, permit application submittals for existing grinding and cutting operations, odor contingency measures, and provisions to ensure continuous compliance. Appendix 1 establishes requirements for periodic smoke tests to determine capture efficiency for ventilation systems of emission control devices.

Subdivision (d) – Total Enclosures

Upon adoption of PR 1430, metal forging facilities will be prohibited from conducting any metal grinding or metal cutting operations, or small part grinding outside of a temporary enclosure, building, or total enclosure. As there were no prior requirements for containment of these operations within any type of enclosure, one of the primary objectives of PR 1430 is to have all facilities ultimately conduct metal grinding or cutting within a total enclosure. Metal forging facilities currently conduct metal grinding and metal cutting operations in a variety of enclosures

with some facilities not conducting metal grinding or cutting inside any type of enclosure at all. Therefore, there are two compliance paths depending on whether or not the facility currently conducts metal grinding or cutting inside an existing building as of date of rule adoption.

All metal grinding and metal cutting operations will be required to be conducted in a total enclosure that minimizes the release of fugitive metal dust emissions from passages, doorways, and bay doors by installing automatic roll-up doors, plastic strip curtains, or vestibules for doors and openings of the total enclosure. Alternative methods to minimize the release of fugitive metal dust from the total enclosure may be used if the owner or operator can demonstrate to the Executive Officer (an) equivalent or more effective method(s) to minimize cross-draft conditions. The total enclosure shall be completed:

- No later than 6 months after rule adoption for facilities conducting metal grinding or metal cutting operations in a building (as of date of adoption) that is to be modified to a total enclosure for compliance with the proposed rule; or
- No later than 12 months after rule adoption, if a new total enclosure is constructed to meet the provisions of paragraph (d)(2), provided the owner or operator provides written notice to the Executive Officer within 60 days after rule adoption, that a new total enclosure will be constructed.

Facilities that do not have existing buildings for metal grinding or cutting operations prior to date of adoption, or intend to build a new building, are given additional time to erect a total enclosure as it may take additional time to secure the necessary permits and construct the total enclosure. Provided an owner or operator with an existing building notifies the Executive Officer within 60 days of rule adoption that they will be constructing a new total enclosure (building), the proposed rule will allow 12 months to complete construction of the new total enclosure. Throughout the rulemaking process, the SCAQMD staff became aware that there are some facilities that although they currently are grinding in a building, may elect to house all grinding operations in a single structure and may opt to construct a new total enclosure. During the interim, the owner or operator would still be required to conduct their grinding operations in the existing building until the new total enclosure was completed.

Until the total enclosure requirements of the rule are met, the owner or operator shall conduct metal grinding and metal cutting operations in a temporary enclosure or a building. A temporary enclosure means a structure comprised of a floor, roof, walls and or partitions on at least three sides or three-quarters of the perimeter that surrounds areas where metal grinding or metal cutting operations are conducted. During this time period, the facility shall limit the amount of fugitive metal dust by more frequent and rigorous housekeeping procedures. In addition to the housekeeping provisions specified for total enclosures, the owner or operator will be required to conduct, after or at the end of each operating shift, wet cleaning or HEPA vacuuming of: floors within 30 feet of metal grinding and metal cutting work station(s), floors within 40 feet of an entrance/exit for the temporary enclosure or building, and floors of temporary enclosure or building areas where metal grinding or metal cutting operations occur.

All enclosure types shall be designed in a manner that does not conflict with requirements set forth by the Occupational Safety and Health Administration (OSHA) or the California Division

of Occupational Safety and Health (CAL-OSHA) for worker safety. To ensure that total enclosures are maintained and effective, the owner or operator shall inspect any total enclosure once a calendar month for breaks, cracks, gaps or deterioration that could cause or result in fugitive metal dust. PR 1430 requires prompt repairs of total enclosures, which will lower the potential release of fugitive metal particulate dust to the open air. Any breaks, cracks, gaps, or deterioration from any total enclosure that could cause or result in fugitive metal dust shall be repaired within 72 hours of discovery. The Executive Officer may approve a request for an extension beyond the 72 hours if the request is submitted before the 72-hour time limit, and the facility can substantiate that the repair will take longer than 72 hours or equipment, parts, or materials needed for the repair cannot be obtained within 72 hours. If upon inspection the owner or operator discovers a break, crack, gap or deterioration *that results* in fugitive metal dust, the owner or operator shall immediately stop metal grinding and cutting operations. However, the owner or operator may resume operations within the 72-hour repair period if temporary measures are implemented that ensure no fugitive metal dust results from the break, crack, gap or point of deterioration.

To provide further protection to nearby sensitive receptors, PR 1430 will require some facilities to install total enclosure with negative air by venting it to an emission control device that meets the requirements of subdivision (e) no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. A total enclosure with negative air will be required for a facility if the property line of the facility is located:

- Within 500 feet of the property line of any residence including private homes, condominiums, apartments, and living quarters; daycare centers; health care facilities such as hospitals or retirement and nursing homes; long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing; or
- Within 1,000 feet of the property line of any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including kindergarten and grades 1 through 12, inclusive; and early head start schools, head start schools, and preschools. This provision does apply to any private school in which education is primarily conducted in private homes.

The distance of 500 feet was selected for "sensitive receptors" (not including types of schools), and is based on the CARB's 2005 "Air Quality and Land Use Handbook: A Community Health Perspective." Modeling and monitoring studies conducted by CARB show that the localized risk of toxic metal particulates such as hexavalent chromium, diminishes significantly at 300 feet. Based on input from the stakeholder working group from community and environmental representatives as well as input from members from the Stationary Source Committee, the distance to sensitive receptors was expanded from 300 to 500 feet. A distance of 500 feet will provide an extra level of health protection. The handbook also considered the varying levels of fugitive emissions from a facility and the toxicity of the metal particulates, and a distance of 1,000 feet is also recommended as a precautionary measure. Thus the distance of 1,000 feet was selected in PR 1430 as the protective distance for schools, and based on input from community and environmental representatives and teachers, preschools, ~~e~~Early Learning and Developmental Programs as defined by the U.S. Department of Education, which includes programs such as Early Head Start and Head Start programs, ~~Head Start, and Head Start programs~~ were added with schools as these early education entities may not be on school grounds.

Under the proposed rule, the in-draft velocity of the total enclosure with negative air shall be continuously maintained at a minimum of 200 feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups, no later than 6 months after a Permit to Construct for the emission control device venting the total enclosure is issued by the Executive Officer. The in-draft velocity of 200 fpm was selected based on U.S. EPA Method 204 – Criteria for and Verification of a Permanent or Temporary Enclosure.

Subdivision (e) - Metal Grinding and Cutting Emission Requirements

The owner or operator of a metal forging facility shall vent emissions from all metal grinding and metal cutting operations to an emission control device no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. The emission control device shall not exceed a PM outlet concentration of 0.002 grains of particulate matter per dry standard cubic foot (gr/dscf). Additionally, PR 1430 requires that the final stage of any emission control device be fitted with HEPA filters or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, and the National Fire Protection Association (NFPA) regarding safety. SCAQMD staff selected an outlet concentration limit of 0.002 gr/dscf due to the fact that this level has been achieved in practice by a metal forging facility with the type of emission control device that will be required for compliance with PR 1430. SCAQMD staff also determined that control technology representing 99.97% control efficiency for 0.3 micron particles was achievable at metal forging facilities as multiple facilities were observed to have installed HEPA filters to control fugitive metal particulates from metal grinding operations.

PR 1430 allows a facility to alternatively fit the final stage of any emission control device with filter media rated by the manufacturer to achieve a minimum of 98% control efficiency instead of 99.97% control efficiency for 0.3 micron particles. To qualify for the alternative, the facility must not vent billet grinding, swing grinding, torch cutting, or metal cutting to the subject emission control device; only operate a combination of 10 or fewer hand grinding units or stand grinding stations to the subject emission control device; and toxic emissions from the emission control device shall not exceed the screening levels identified in Table I – Toxic Air Contaminants in SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants, or does not result in a risk of over 1 in a million using the most recent SCAQMD Risk Assessment Procedures for Rule 1401. Billet grinding, metal cutting, swing grinding, and torch cutting typically remove large quantities of metals, and generally have the potential to generate more emissions compared to hand or stand grinding. Therefore, a lower efficiency of 98% is being allowed for the generally lower form of grinding in terms intensity and emissions volume. However, the emissions generated from a significant number of hand grinding or stand grinding units may be equal to or more than the amount of metal being removed from metal grinding or metal cutting methods that remove large quantities of metal. Therefore, the alternative is only applicable to metal grinding operations that have 10 or fewer hand grinding units or stand grinding stations.

All emission control devices are required to be operated at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD. The date of version of the referenced industrial ventilation manual will be included in the facility permit.

To ensure that the emission collection system for an emission control device will effectively capture metal particulate emissions, within 30 days after rule adoption, the owner or operator of a metal forging facility shall provide permanent visual indicators or markings at all hand grinding, stand grinding, swing grinding, and torch cutting stations that identify the maximum distance metal grinding may occur from the emission control device. Metal grinding activity shall be in front of the hood face and within the area identified by the visual indicators or markings. The air flow shall not be obstructed between the metal grinding operation and the hood for the emission collection system.

PR 1430 also requires the removal of any weather cap installed on any stack that is a source of metal particulate emission within 30 days from rule adoption. The facility is allowed under the proposed rule to instead install a butterfly valve in place of the weather cap. SCAQMD staff has concluded that the weather cap allows for the accumulation of metal particulates that can be dispersed at higher concentrations into the air.

Subdivision (f) – Housekeeping Requirements

The following housekeeping requirements are proposed to minimize fugitive metal particulate emissions. All requirements shall be effective within 30 days after the date of rule adoption.

- For metal grinding operations and metal cutting operations, semi-annual wet cleaning or HEPA vacuum of roof tops for total enclosures that house areas associated with metal grinding or cutting operations.
- For metal grinding operations, metal cutting operations, and small part grinding operations, conduct daily wet cleaning or HEPA vacuum of:
    a. areas where metal containing wastes generated from metal grinding or metal cutting operations are stored, disposed of, recovered or recycled;
    b. floors within 20 feet of metal grinding or cutting work station(s);
    c. floors within 20 feet of any entrance/exit point for a temporary enclosure, building, or total enclosure; and
    d. floors within 10 feet of an emission control device dedicated to metal grinding or metal cutting operations.
- The owner or operator of a metal forging facility that conducts metal grinding operations, metal cutting operations, or small part grinding shall also implement the following housekeeping measures:
    a. Monthly wet cleaning or HEPA vacuum of ground surfaces of a temporary enclosure, building, or total enclosure areas where metal grinding or metal cutting operations occur.
    b. Store all materials capable of generating any amount of fugitive metal dust including, but not limited to, metal containing waste generated from the

housekeeping requirements and the maintenance and repair activities (see below), in sealed containers, unless located within a total enclosure

c. Compressed air cleaning or dry sweeping operations shall not be conducted within 30 feet of any metal grinding or metal cutting operation, unless the compressed air cleaning operation or dry sweeping is conducted under an emission control device pursuant to subdivision (e).

Examples of wet cleaning required by the housekeeping provisions above include methods such as wet mopping and wet scrubbing conducted in a manner that does not generate fugitive metal dust.

Subdivision (g) – Maintenance and Repair Activity

As defined in subdivision (c), "maintenance and repair activity" means any of the following activities conducted outside of a total enclosure that generates or has the potential to generate fugitive metal-dust:

a) Maintenance or repair activities on any emission control device that vents metal grinding or cutting operations; or
b) Replacement or removal of any duct section used to vent metal grinding or cutting operations.

It should be noted that PR 1430 does not require maintenance and repair activities to be conducted within any type of enclosure.

No later than 30 days after date of rule adoption, the following measures must be implemented when conducting maintenance and repair activities on any emission control device that vents metal grinding or cutting operations or replacement or removal of any duct section, used to vent metal grinding or cutting operations.

- No later than one hour after completion of any maintenance or repair activity, the owner or operator of a metal forging facility shall wet clean or HEPA vacuum the floors within 20 feet of where the maintenance or repair activity was conducted.
- Any maintenance and repair activity shall be stopped immediately when instantaneous wind speeds are ≥ 20 mph, unless the activity is being conducted within a building or temporary enclosure. Maintenance or repair work may be continued to prevent the release of metal particulate emissions. The wind speed must be determined by a wind speed measuring device, for example, an anemometer that is used by the owner or operator or the Executive Officer.
- Wet clean or HEPA vacuum all metal-contaminated equipment and materials used for any maintenance and repair activity immediately after completion of work in a manner that does not generate fugitive metal dust

Subdivision (h) – Source Tests

PR 1430 will require an annual source test for PM emissions once every 12 months to demonstrate compliance with the particulate emission standard of 0.002 grains per dry cubic foot. If an annual source test demonstrates that PM emissions were no more than 50% of the PM emission standard of 0.002 gr/dscf, the next text for PM emissions from that emission control device may be performed no later than 24 months after the date of the most recent source test.

Source testing for multiple metals, including hexavalent chromium is also required. A source test for multiple metal emissions will be required once every 48 months to be harmonious with the AB2588 quadrennial cycle for evaluating health risk. However, if the facility demonstrates that all baghouse catch samples for metal grinding or metal cutting operations contain total chromium concentrations of 1% or less by weight during the removal or disposal of any baghouse catch as determined by a metals analysis by X-ray fluorescence, the owner or operator is not required to conduct source test for hexavalent chromium emissions once every 48 months.

Proposed Rule 1430 requires facilities to measure the pressure across the HEPA filter. If the monitored pressure across the filter is outside of the acceptable range for a 4-hour time period on 3 or more separate days, or any consecutive 24-hour period, the owner or operator is required to perform the following source tests within 60 days after the continuous data acquisition system indicated the pressure across the HEPA filter was not maintained:

- Source test for PM emissions
- Source test for multi-metal emissions; and
- Source test for hexavalent chromium unless the facility conducts metal analyses that demonstrate all bulk samples from the baghouse catch are no greater than a concentration of 1% by weight for total chromium.

Facilities with an existing, SCAQMD-permitted metal grinding or cutting emission control device in operation before the date of rule adoption shall submit a source test protocol no later than 60 days after the date of rule adoption. Subsequent source test protocols for source tests conducted after the initial source test shall be submitted no later than 90 days prior to the compliance deadline to conduct the next source test. Metal forging facilities with a new or modified metal grinding emission control device with an initial start-up date on or after the date of rule of adoption, shall submit a source test protocol for initial source to demonstrate compliance no later than 30 days after initial start-up. Subsequent source test protocols for source tests conducted after the initial source test shall be submitted no later than 90 days prior to the compliance deadline to conduct the next source test. The initial source test protocol may be used for subsequent source tests if there are no changes.

Source test protocols shall include the source test criteria of the end user and all assumptions, required data, and calculated targets for testing the following:

- Target particulate mass emission standard;
- Preliminary target pollutant analytical data;
- Planned sampling parameters; and
- Information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.

The owner or operator of a metal forging facility shall conduct the source test for an emission control device no later than 60 days from approval of the source test protocol, unless otherwise approved in writing by the Executive Officer. The owner or operator shall notify the Executive Officer in writing 10 calendar days prior to conducting any source test, and notify the Executive Officer within three business days (Monday through Friday) of when the facility knew or should have known of any source test results that exceeds any of the emission standards. Notifications

shall be made to 1-800-CUT-SMOG and followed up in writing to the Executive Officer with the results of the source tests within seven business days of notification.

The Executive Officer may approve a request for an extension of the compliance deadline for source tests to be conducted if the facility can demonstrate that it timely filed a complete source test protocol and associated information, and is unable to meet the deadline due to reasons beyond the facility's control. The request shall be submitted no later than 30 days before the compliance deadline.

The rule lists the following applicable test methods which are required to be conducted representative of typical operating conditions:

- SCAQMD Method 5.1 – *Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train*
- SCAQMD Method 5.2 – *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter*
- SCAQMD Method 5.3 – *Determination of Particulate Matter Emissions from Stationary Sources Using an In-Stack Filter*
- CARB Test Method 436 – *Determination of Multiple Metal Emission from Stationary Sources*
- U.S. EPA Method 306 – *Determination of Chromium Emission from Decorative and Hard Chromium Electroplating and Chromium Anodizing Operations – Isokinetic Method*

The use of an alternative or equivalent test method will be allowed, as defined in 40 CFR 60.2, if approved in writing by the Executive Officer, in addition to California Air Resources Board, or the U.S. EPA, as applicable. The reports from source testing conducted shall be submitted to the SCAQMD in 60 days or less after the completion of the test.

Facilities shall use a test laboratory approved under the SCAQMD Laboratory Approval Program (LAP) for the source test methods cited above. Approved labs under LAP can be found on the SCAQMD website. 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.

Subdivision (i) - Monitoring

Proposed Rule 1430 includes parametric monitoring to ensure proper operation of the pollution control devices. Parametric measurements are generally operational parameters of the air pollution control device that indicates the performance and proper operation of the control device. Parametric monitoring is in addition to source testing and provides a good indicator if there is an issue with the pollution control device in between source testing to ensure continued compliance. As discussed below there are monitoring requirements for the baghouse, HEPA filtration, and air flow.

Baghouse Leak Detection System

PR 1430 requires facilities to apply for a permit to install, operate, calibrate, and maintain a Bag Leak Detection System (BLDS) for each baghouse to comply with the emission standards of

subdivision (e) within 60 days of rule adoption for baghouses existing prior to date of rule adoption. The requirements for the BLDS are broader than those found in SCAQMD Rule 1155, because all baghouses subject to PR 1430 will be required to have a BLDS.

Pressure Across the HEPA Filter

The pressure across the HEPA filter of an emission control device shall be continuously measured with a mechanical gauge that is visible and in clear sight of operator or maintenance personnel. Monitoring of the pressure drop across the HEPA filters is an indicator that the filters are not clogged or do not have leaks that may compromise its efficacy. The monitoring device will be required to:

- Be equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;
- Be calibrated according to manufacturer's specifications at least once ~~a frequency of not less than twice~~ every calendar year;
- Be 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) minutes;
- Generate a data file from the computer system interfaced with each DAS each calendar day. The data file shall be saved in electronic Microsoft Excel (xls or xlsx) format 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 4-hour rolling average pressure readings recorded by this device each calendar day; and
- Be maintained in accordance with manufacturer's specifications.

During the rulemaking process several community representative commented that the proposed rule needed to include provisions to ensure continuous compliance and triggers were needed to encourage facilities to comply with the proposed rule. As a result, staff added provisions for a continuous data acquisition system to track the pressure across the HEPA filter. In addition, provisions for additional source testing were added to the proposed rule in the event the pressure across the HEPA is continually having issues. The averaging time allow sufficient time for the operator to address the issue, before the trigger for additional source testing is required.

Under Proposed Rule 1430, if the pressure across the HEPA filter is not maintained within ~~-1/2 times to +2 times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitations for~~ the range specified in the Permit to Operate for the emission control device based on hourly or more frequent recordings by the DAS for the averaging periods specified below, the owner or operator shall require additional source testing as discussed in source testing section of this chapter.

- A 4-hour time period on 3 or more separate days over 60 continuous days; or
- Any consecutive 24-hour period.

The acceptable range of pressure across the HEPA filter specified in the Permit to Operate shall be determined by the Executive Officer. The determination shall be based on supporting documentation such as manufacturer specifications and source test results.

Verification of Air Flow to Air Pollution Control Device

The corresponding duct static pressure for the minimum hood induced capture velocity for emission control devices shall be accurately measured once per operating day using the measurement procedures specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Operation and Maintenance,* published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD, or any more stringent methods required by OSHA or CAL-OSHA.

In addition, for each emission collection system required to be monitored under PR 1430, confirmation of the capture velocity referenced in paragraph (e)(4) and a periodic smoke test shall be conducted at least once every 3 months. The periodic smoke provides a qualitative test for owners and operators to help determine whether cross draft conditions or other operations conducted by the facility are affecting the ability of the emission collection system or hood to effectively capture emissions and verification that the air flow to the pollution control device is moving towards the air pollution control device. Smoke test procedures are outlined in Appendix 1 of the proposed rule.

Subdivision (j) – Recordkeeping

PR 1430 will require records be kept to indicate that the facility is compliant with PR 1430. Required records include:

- Monthly records of weight of metal waste collected by the baghouse catch and if applicable, any metal analyses for bulk samples of baghouse catches showing percent by weight of total chromium;
- Monthly records of weight of metal waste collected by housekeeping activities;
- Dates when bags for baghouses, cartridges, or HEPA filters are replaced;
- Records of periodic smoke tests, emission control device inspection and maintenance, <u>total enclosure inspections,</u> housekeeping activities, maintenance and repair activities, and dates and times when the specific activity was completed.
- Logs of reports to the facility regarding odors or other air quality related issues that includes the date, time, name and contact information for the person reporting the issue, source of the issue, and how the issue was resolved.
- Records for the Bag Leak Detection System
- Records of any odor complaint received identifying:
    - The specific source(s) of the odor within the metal grinding or metal cutting operation;
    - How the facility addressed the source(s) of the odor; and
    - How generation of the odor will be avoided in the future.

All records shall be maintained for at least five years and maintained onsite for at least two years. Records shall be made available to SCAQMD personnel upon request.

Subdivision (k) – Signage

Based on input from the community representatives, the wording of the sign has been modified to reference other air quality issues in addition to odors and to have the SCAQMD listed on the sign before the facility contact. As a result, PR 1430 will require facilities to install a sign that

says, "TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST, OR SMOKE FROM THIS FACILITY, CALL EITHER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG OR [*FACILITY CONTACT PHONE NUMBER*]." The sign shall be installed within 50 feet of ~~each~~ the main entrance of the facility that is visible to the public, and in a location on each side of the facility that is visible to the public. The sign shall measure at least 16 square feet, and display lettering at least 3 inches tall with text contrasting with the sign background.

The California Metals Coalition had expressed and recommended that only the facility contact be listed on the sign, and that the SCAQMD pursue other mechanisms to educate the public on how to report air quality issues such as through town hall meetings and newspaper notices. The SCAQMD has used signage similar to what is required under Proposed Rule 1430 in Rule 403 for dust, Rule 461 for gasoline dispensing facilities, Rule 410 for material recovery facilities, and Rule 1420.1 for large lead-acid battery recycling facilities.

Subdivision (l) – Permit Application Submittals for Existing Metal Grinding or Cutting Operations

Facilities shall submit complete permit applications no later than 60 days after date of rule adoption for all construction and/or necessary equipment for emission control devices, bag leak detection systems, and total enclosures with negative air required by PR 1430.

Subdivision (m) – Odor Contingency Measures

Proposed Rule 1430 includes contingency measures that an owner or operator of a metal forging facility would be required to implement if they received four confirmed odor complaints within a consecutive six month period. Under the proposed rule, a confirmed odor complaint is an occurrence of odor relating to metal grinding or metal cutting operations resulting in a complaint by different individuals from different households, with the source of the odor having been verified by District personnel as coming from a specific operation subject to the rule. An individual may only be counted as one confirmed odor complaint per day.

The objective of this subdivision is to identify measures that an owner or operator can quickly implement to reduce odors from their metal grinding or cutting operations to be more proactive. Under paragraph (m)(1), the owner or operator would be required to implement one odor reducing measure from the list below after being notified by the Executive Officer that the facility has received four confirmed odor complaints:

- Operational changes to reduce odors including, but not limited to, changing ingress and egress openings that may affect the release of odors from a total enclosure, moving grinding stations further from openings within the total enclosure. Implementation of these types of odor reducing measures will be required 60 days after notification by the Executive Officer;
- Process changes to reduce odors, including but not limited to, use of different materials in the grinding element, and materials applied before, during, or after metal grinding or metal cutting operations. Implementation of these types of odor reducing measures will be required 60 days after notification by the Executive Officer;

- Enhancements to the temporary enclosure, building, or total enclosure to reduce odors escaping the total enclosure, including but not limited, to installation of booths or barriers around grinding stations to contain odors from escaping the total enclosure, upgrade openings used for ingress or egress that will provide even greater control of odors escaping total enclosure. Implementation of these types of odor reducing measures will be required 90 days after notification by the Executive Officer; ~~or~~
- Implementation of any odor reducing measures that requires a new or modified Permit to Construct will be allowed to be completed no later than 6 months after the permit is issued by the Executive Officer; and
- Any other measure or modification, approved by the Executive Officer, that can help to reduce or minimize odors escaping from total enclosure, based on an implementation schedule approved by the Executive Officer.

Within 30 days after completing the implementation of a measure required under paragraph (m)(1), the owner or operator of a metal forging facility shall provide a description of the measure that was implemented and notify the Executive Officer that implementation of the measure has been completed.

Subdivision (n) – Rule 219 Exemption

As noted previously, metal grinding and cutting operations are currently an unregulated source in the Basin and are exempt from requiring written permit under SCAQMD Rule 219. PR 1430 would eliminate this exemption by stating that as of the beginning date of proposed rule adoption, any equipment subject to PR 1430 for metal grinding or cutting operations and associated emission control devices are to no longer be exempt from the requirement of a written permit pursuant to SCAQMD Rule 219. As of this writing, rule development for Proposed Amended Rule 219 has already been initiated by SCAQMD staff to incorporate changes and additions, including those that will provide consistency with PR 1430.

Appendix 1 – Smoke Test to Demonstrate Capture Efficiency for Ventilation Systems of an Emission Control Device

Appendix 1 specifies the requirements for periodic smoke tests to demonstrate capture efficiency for ventilation systems of emission control devices for metal grinding or metal cutting operations pursuant to subdivision (d). The periodic smoke test requirement of PR 1430 will not be required if performing such test presents an unreasonable risk to safety. An example of such unreasonable risk to safety includes having to conduct a smoke test at collection sites that would be extremely dangerous, if not deadly, for somebody to work in that collection zone. Refer to PR 1430 for detailed information on smoke test procedures.

CHAPTER 3: IMPACT ASSESSMENT

AFFECTED SOURCES

EMISSIONS IMPACT

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

SOCIOECONOMIC ASSESSMENT

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

COMPARATIVE ANALYIS

AFFECTED SOURCES

Based on site visits conducted by SCAQMD staff, there were 22 metal forging facilities identified to be conducting metal grinding and/or cutting operations onsite. The facilities serve a variety of industries including: aerospace, oil industry, and automotive. The types of metal alloy forged are aluminum, titanium, steel, and varying percentages of alloys. The starting point of the forging process begins with metal billets and ingots. The starting material undergoes multiple steps involving three primary steps of preparation, forging, and finishing operations.

Table 3-1: Metal Forging Facilities Identified to Conduct Metal Grinding or Cutting

Facilities Visited		
Independent Forge Co	Schlosser Forge Facility	Schultz Steel
Carlton Forge Works	Pacific Forge Inc	Weber Metals
Quality Aluminum Forge, LLC	Press Forge Co	Firth Rixson
California Drop Forge	Continental Forge	Ajax Forge
Aluminum Precision Products Inc	California Amforge Corp	Valley Forge Acquisition
American Handforge	Chem Tech Industries	Performance Forged Products
Sierra Alloys Co.	Mattco Forge Inc.	MS Aerospace
Aerocraft Heat Treating Co. Incorporated*		

* Although this facility has forging equipment and conducts grinding onsite, the forging equipment is an ancillary part of its main process (heat treating) and the grinding is conducting as a sampling for quality control purposes. As such, staff is continuing to evaluate whether this facility will be subject to Proposed Rule 1430.

While the identified 22 facilities conduct grinding and/or cutting at their facility, the type and amount vary across the metal forging industry. SCAQMD staff conducted site visits at the 22 facilities and observed a variety of grinding operations paired with a variety of air pollution control technologies.

Table 3-2:
Summary of Number of Facilities with Various Types of Grinding Activities

Findings		Number of Facilities
Grinding		
	Dry Grinding Operations	22
	Wet Grinding Operations	2
Sawing		
	Dry Cutting Operations	2
	Wet Cutting Operations	19
Containment Structures for Grinding		
	Grinding Operations within a Total Enclosure	2
	Grinding Operations within a Partial Enclosure (3 walls)	16
	Grinding Operations Conducted Outside an Enclosure	4

Table 3-3:
Summary of Types of Air Pollution Controls for Various Grinding Activities

Existing Grinding Operations and Air Pollution Controls at Forging Facilities				
Types of Grinding Operation	**Billet**	**Swing**	**Utility**	**Hand**
Total	2	7	9	17
No Control		2	2	9
Vacuum Collection, lubricant, no-baghouse	-	-	2	-
Cyclone	-	-	1	2
Baghouse without HEPA filters	2	4	4	4
Baghouse with HEPA filters	-	1	-	3
Total with Air Pollution Controls	2	5	7	9

EMISSIONS IMPACT

PR 1430 affects 22 metal forging facilities that that conduct metal grinding or cutting operations onsite. Implementation of PR 1430 will reduce both point and fugitive emissions. Quantifying the point source emission reductions is difficult as many sources do not have current source tests and quantifying emission reductions from fugitive sources is difficult. Monitoring data has shown that the implementation of control measures have reduced ambient air concentrations of nickel. The ambient air concentrations of other metal TACs generated from metal grinding and cutting operations will be concurrently reduced as a result of the control measures required under PR 1430.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to California Environmental Quality Act (CEQA) Guidelines §15252 and §15070 ~~(14 CCR §§ 15252, 15070)~~ and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) for PR 1430. The environmental analysis in the Draft EA concluded that PR 1430 would not generate any significant adverse environmental impacts, and therefore no alternatives or mitigation measures are required. The Draft EA was ~~has been~~ released for a 30-day public review and comment period from January 10, 2017 to February 10, 2017. Three

comment letters were received from the public relative to the Draft EA and responses to the comments have been prepared. The comment letters and the individual responses to the comments have been included in Appendix E of the Final EA. Subsequent to release of the Draft EA, modifications were made to the proposed project. SCAQMD staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the Draft EA. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5. Therefore, the Draft EA is now a Final EA and is included as an attachment to the Governing Board package~~Comment letters are being received from the public relative to the Draft EA and responses to the comments will be prepared and included in the Final EA~~. The SCAQMD Governing Board must review the adequacy of the Final EA, including responses to comments, prior to certification of the Final EA and adoption of proposed Rule 1430.

SOCIOECONOMIC ASSESSMENT

~~A socioeconomic analysis will be conducted and released for public review and comment at least 30 days prior to the SCAQMD Governing Board Hearing on PR 1430, which is anticipated to be heard on March 3, 2017.~~The main requirements of the proposed rule that have cost impacts for affected facilities would include the installation of baghouses with HEPA filters (point-source controls on existing and new closures) and the upgrading of an existing building to a total enclosure or construction of a new total enclosure. Some facilities will be required to add negative air vented to pollution controls to the total enclosure, depending on a facility's proximity to certain sensitive land use. The annual compliance costs of PR 1430 are estimated to range from $6.0 million to $6.2 million, depending on the real interest assumed (1%-4%). Press Forge, a metal forging facility in Paramount, would bear the largest share of annual compliance costs (14% or approximately $875 K annually based on a 4% real interest) due to the installation of a total enclosure with negative air that is necessary based on proximity to certain sensitive land use.

The proposed rule is expected to result in approximately 46 jobs foregone annually between 2017 and 2035 when a 4-percent interest rate is assumed (approximately 44 jobs with a 1-percent real interest rate). The projected job impacts represent about 0.001 percent of the total employment in the four-county region. The socioeconomic assessment was made available to the public at least 30 days prior the Public Hearing and is included as part of the Public Hearing Package.

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

PR 1430 is needed to further protect public health by reducing ~~toxic,~~metal particulate matter emissions, some of which are toxic, and odors from dry metal grinding and cutting operations at metal forging facilities. Metal grinding and cutting operations are currently exempt from SCAQMD permits and are an unregulated source. The general action of metal grinding and cutting is prone to generate fugitive metal particulate, which contains some level of toxic metals, particularly if the grinding or cutting operation is not properly controlled. Proposed Rule 1430 is needed to reduce metal particulate emissions from metal grinding and metal cutting operations at forging facilities to ensure that these operations have the appropriate pollution control equipment, are conducted within an enclosure to ensure fugitive emissions that do not make it to the control device are contained, and to ensure basic housekeeping requirements are followed so that any accumulation of metal particulate around grinding operations is not re-entrained into the air or tracked outside of the facility.

Authority

The SCAQMD Governing Board has authority to adopt PR 1430 pursuant to the California Health and Safety Code Sections seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, and 41700.

Clarity

PR 1430 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

PR 1430 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

Non-Duplication

PR 1430 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 PR 1430, the SCAQMD Governing Board will be implementing, interpreting or making specific the provisions of the California Health and Safety Code Section 41700 (nuisance), and Federal Clean Air Act Section 112 (Hazardous Air Pollutants) and Section 116 (Retention of State authority).

COMPARATIVE ANALYSIS

Health and Safety Code section 40727.2 requires a comparative analysis of the proposed rule with any Federal or District rules and regulations applicable to the same source. See Table 3-1 below.

Table 3-4: Comparison of PR 1430 with NESHAP for Area Source Standards for Nine Metal Fabrication and Finishing Source Categories

Rule Element	PR 1430	NESHAP from Area Source Standards for Nine Metal Fabrication and Finishing Source Categories
Applicability	Facilities who own or operate a metal forging facility where metal grinding or metal cutting operations are conducted onsite	Nine metal fabrication and finishing source categories, including iron and steel forging facilities
Outdoor Metal Grinding	Prohibition of metal grinding in the open air	- None
Total Enclosures	- Conduct all metal grinding or metal cutting operations within a total enclosure that for containment and minimization of fugitive emissions - Inspect total enclosures once a month - Implement total enclosures with negative air if metal grinding operations are located within 500 feet of sensitive receptor or 1,000 feet of a pre-school, pre-Head Start, Head Start, or school	- None
Metal Grinding and Cutting Emissions	- Vent metal grinding and metal cutting emissions to an emission control device meeting 0.002 grains/dscf - Emission control devices shall be equipped with filters that achieve a 99.97% control efficiency on 0.3 micron size particles; alternatively equip with filters that meet 98% control based on lower volume grinding operations - Requirements for design and operation per *Industrial Ventilation Manual* - Inspect, operate, and maintain each emission control device pursuant to manufacturer specification	- Capture PM emissions from dry grinding and dry polishing and vent the exhaust to a cartridge, fabric, or HEPA filter - Does not include hand-held or bench-scale devices
Housekeeping Requirements	- Semi-annual cleanings of total enclosure roof tops - Daily wet cleaning or HEPA vacuum of areas subject to metal grinding or metal cutting dust - Monthly cleanings of floors of enclosures where metal grinding or metal cutting occurs - Store fugitive metal dust material in containers	- Minimize excess dust in the surrounding areas to reduce metal fugitive hazardous air particulates
Maintenance and Repair Activity Requirements	- Wet mop or vacuum the floors within 20 feet of where maintenance or repair activity was conducted within one hour after completion - Cease maintenance and repair activity if winds $\geq$ 20 mph - Clean by wet wash or vacuum all metal-contaminated equipment immediately after	- Operate equipment according to manufacturer's specification

Rule Element	PR 1430	NESHAP from Area Source Standards for Nine Metal Fabrication and Finishing Source Categories
	completion	
Source Test	- Annual requirement to source test emission control devices for PM - Option to source test once every 24 months with a source test of 50% or less of PM emission standard - Source test once every 48 months for multiple metals and hexavalent chromium unless total chromium is <1% for each baghouse change out - Provisions for additional source testing if outside of acceptable operating pressure for HEPA filtration - Submit source test protocol and notify the SCAQMD in a timely manner - Conduct source test within 60 days source test protocol approval	- None
Monitoring	- Install, operate, inspect, and maintain a BLDS system pursuant to SCAQMD Rule 1155 - Minimum hood induced capture velocity shall be measured by static pressure once per operating dayshift - Continuously monitor the pressure across an add-on air pollution control device to ensure the press drop is within ~~-1/2 times to +2 times the inches of water of the value established during the performance test~~the range specified in the permit for the emission control device - Periodic smoke test of each emission collection device once every 3 months	- None
Recordkeeping	- Monthly records of metal waste generated from baghouse catch, percent total chromium, and metal waste generated from housekeeping - Dates when bags for baghouses or HEPA filters are replaced - Logs of report to the facility regarding odor or other air quality related issues, including confirmed odor complaints - Maintain smoke test results, emission control device inspection and maintenance, housekeeping activities, and maintenance and repair activities - Maintain BLDS records	- None
Signage	- Install signage that lists contact information in the event of air quality issues including odors, smoke, or dust	- None
Odor Contingency Measures	- Implement odor contingency measures of the proposed rule if the owner or operator	- None

Rule Element	PR 1430	NESHAP from Area Source Standards for Nine Metal Fabrication and Finishing Source Categories
	receives four confirmed odor complaints relating to the metal grinding or metal cutting operation within a consecutive 6 months	

REFERENCES

REFERENCES

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APPENDIX A: RESPONSE TO COMMENTS

Comment Letter #1
Press Forge Co.
December 5, 2016

PRESS FORGE CO.

7700 JACKSON STREET • PARAMOUNT, CALIFORNIA 90723
Phone: (562) 531-4962 • Fax: (562) 531-4826

December 5, 2016

Ms. Susan Nakamura (SNakamura@aqmd.gov)
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

SUBJECT: Control of Fugitive Dust Emissions

Dear Ms. Nakamura:

I am the General Manager of the Press Forge facility located in Paramount, CA. South Coast Air Quality Management District is currently developing a proposed Rule 1430 to control metal dust emissions from grinding operations at forging facilities. At your December 1, 2016 meeting about the rulemaking effort, Press Forge was identified as a facility that was conducting grinding outdoors. I wanted to correct the record and make sure that you are aware that Press Forge ceased all outdoor grinding on or before November 10th. While the majority of our grinding has occurred indoors for as long as I have worked at the facility, there was some small hand grinding conducted outside up until that time. That is no longer the case. Now all grinding is conducted indoors with emissions controlled by baghouses and the outdoor hand grinding stations have been permanently removed. 1-1

I also wanted to ensure that you were aware of all the other improvements at the facility to reduce emissions related to our grinding operations. Press Forge is in the process of constructing a new building that will enable us to conduct all hand grinding operations within an enclosed space under negative pressure and certified as a total enclosure. Exhaust from the new hand grinding facility will be routed to baghouses with HEPA secondary filtration. This structure is being built with careful attention to your draft rule language to ensure that we meet or exceed all of the anticipated requirements. We expect the new hand grinding facility to be fully operational by late spring of 2017--well in advance of when the rule could require such upgrades. In the interim, in order to minimize the potential for fugitive dust, we are in the process of implementing the following additional procedures: 1-2

- Prohibiting use of compressed air for cleaning purposes as indicated in Rule 1430
- Prohibiting use of dry sweeping for cleanup as indicated in Rule 1430
- Purchasing additional HEPA vacuums to replace broom sweeping and facilitate housekeeping as indicated in Rule 1430
- Utilization of a mobile wet sweeper in place of the existing mobile dry sweeper
- Limiting deaning of areas potentially impacted by metal dust to wet methods or HEPA vacuum
- Implementing enhanced maintenance procedures using the HEPA vacuums and wet cleanup to minimize the suspension of dust as well as trackout
- Training our workers on the importance of minimizing fugitive dust emissions

PRESS FORGE CO.

7700 JACKSON STREET • PARAMOUNT, CALIFORNIA 90723
Phone: (562) 531-4962 • Fax: (562) 531-4826

We believe that our process of constant improvement is resulting in positive change and that we are successfully decreasing fugitive dust emissions from our facility. } 1-3

Please let me know if you have any questions.

Sincerely,



Robert Ortiz

cc: Kyle Nelson
Tom Wood

1-1 **Response:** Thank you for your correspondence. On December 9, 2016, SCAQMD rules staff visited Press Forge Co. and was pleased to see that the hand grinding operation was being conducted in a temporary enclosure with a temporary baghouse.

1-2 **Response:** During the SCAQMD's visit to Press Forge Co. on December 9, 2016, representatives from Press Forge Co. shared with SCAQMD staff the other improvements that were underway including grading for a new total enclosure to house their grinding operation and HEPA vacuum. The SCAQMD staff encourages Press Forge Co. to continue working towards the many air quality improvements.

1-3 **Response:** SCAQMD staff agrees that the process of constant improvement is resulting in positive change and will help to reduce fugitive metal particulate.

Comment Letter #2
Independent Lubricant Manufacturers Association
December 9, 2016

ILMA
Independent Lubricant Manufacturers Association

400 North Columbus Street, Suite 201
Alexandria, VA 22314
p 703.684.5574
f 703.836.8503
www.ilma.org
ilma@ilma.org

December 9, 2016

Via Electronic Mail (SNakamura@aqmd.gov)

Ms. Susan Nakamura
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

Re: Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities

Dear Ms. Nakamura:

The Independent Lubricant Manufacturers Association ("ILMA" or "Association") submits these comments on the South Coast Air Quality Management District's ("SCAQMD") pre-rulemaking draft Proposed Rule 1430 - Control of Emissions from Grinding Operations at Metal Forging Facilities. ILMA has participated in the stakeholder meetings on Proposed Rule 1430 and respectfully requests that its suggested modification below be incorporated into the draft rule eventually proposed for public comment.

Introduction to ILMA

ILMA is national trade association with 355 member companies. As a group, ILMA members blend, compound, and sell over 25 percent of the United States' lubricant needs (*e.g.*, passenger car motor oils) and nearly 80 percent of the metalworking fluids ("MWFs") utilized in the country. 2-1

Independent lubricant manufacturers by definition are neither owned nor controlled by companies that explore for or refine crude oil to produce lubricant base stocks or that produce chemical additives. Base oils are purchased from refiners, who also are competitors in the sale of finished products. Additives are purchased from suppliers, who also may be competitors in the sale of finished products. ILMA members succeed by processing, producing, and distributing high-quality, often specialized, lubricants.

Section (b) – Applicability – Should be More Precisely Defined

Section (b) - Applicability states that "[t]his rule applies to all persons who own or operate a metal forging facility where dry metal grinding or metal cutting operations are conducted. This rule does not apply to metal grinding or metal cutting conducted under a continuous flood of metal removal fluid." 2-2

President, Beth Ann Jones, Hangsterfer's Laboratories, Inc.
Vice President, Dave Croghan, Maxum Petroleum
Treasurer, Barbara Kudis, Allegheny Petroleum Products Company
Secretary, Chuck Decker, American Oil & Supply International LLC
Immediate Past President, Frank H Hamilton III, South Atlantic Services, Inc.
Chief Executive Officer, Holly Alfano
General Counsel, Jeffrey L. Leiter

ILMA requests that SCAQMD add the following to this section:

> A continuous flood of metal removal fluid is defined as direct application of fluid to the tool or work piece interface at a rate that is sufficient to adequately suppress metal dust emissions. Minimum Quantity Lubrication (MQL) is not considered a continuous flood of metal removal fluid since the rate of application is insufficient to suppress metal dust emissions.

2-2 cont

Definitions

Additional definitions for "Minimum Quantity Lubrication" and "flood cooling" are needed to improve Proposed Rule. The Association is developing recommended definitions for these terms and will supplement this submission.

2-3

* * * * *

ILMA urges SCAQMD to adopt the modification to the applicability section set forth above.

Sincerely,

Holly Alfano
Chief Executive Officer

CC: ILMA's Metalworking Fluids Committee
Jeffrey L. Leiter, Esq.
Daniel T. Bryant, Esq.

2-1 Response: The SCAQMD appreciates ILMA's participation in the rulemaking process.

2-2 Response: Thank you for your comment. The definition of "metal removal fluid" was revised to state that "metal removal fluid excludes Minimum Quantity Lubrication techniques that coat the tool work piece interface with a thin film of lubricant and minimize heat buildup through friction reduction. Minimum Quantity Lubrication fluids are applied by pre-coating the tool in the lubricant or by direct application at the tool work piece interface with a fine mist."

2-3 Response: The SCAQMD staff looks forward to receiving the additional suggestions.

Comment Letter #3
Solutions 4 Blast
December 10, 2016

Solutions 4 Blast
aka Air Cleaning Systems
aka Solutions 4 Industry, Inc.
3633 Pomona Boulevard
Pomona, CA 91768

December 10, 2016

Ms. Susan Nakamura
Acting Assistant Deputy Executive Director
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182

RE: Stakeholder Comments About Proposed Rule 1430

Ms. Nakamura,

I would like to take a moment to comment on proposed Rule 1430. While our company is not directly affected by any rules generated by SCAQMD, we are still impacted. The long term effect of any onerous regulation is a loss of manufacturing companies that cannot afford to upgrade or are tired of the continuous barrage of regulations. This may happen via closure or moving the manufacturing to another state or country. This causes a loss of good paying jobs and affects companies such as ours whose client base is the manufacturers in our region. (It is a fact that previous rules enacted by SCAQMD have caused manufacturers to close or move their operations to other states or countries.) Thus, it is important for a rule to be carefully crafted and the financial impact (to the business and region) carefully considered (because money to pay for upgrades and good paying jobs don't grow on trees).

I became aware of this proposed rule less than two months ago. My immediate gut reaction was two-fold. First, I said this could be good for our business because we sell a lot of the pollution control equipment needed to implement this rule. However, my second reaction was disconcerting… the long term impact of this rule will likely be the loss of more forgers in Southern California. Furthermore, if SCAQMD goes after forgers with this rule, it won't be long before they impose this same rule on other metal working industries which means the loss of more of our client base. 3-1

Now, I'm not so naïve as to believe that this letter could possibly make SCAQMD reconsider the implementation of this rule. That would fly in the face of all things bureaucratic. However, I am hoping that I can address a few issues with the rule that I see (as an expert in most things related to dust collection, a person with heavy experience in manufacturing and a concerned business owner) and SCAQMD will consider postponing the implementation of the rule while appropriate investigation and/or studies are performed and these issues are addressed:

Page 3, Paragraph (d)(2)
STATEMENT: …. shall continue conducting all metal grinding operations in the enclosure until the total enclosure and cross-draft requirements specified in paragraph (d)(3) are met.
ISSUE: No cross-draft requirements are specified in paragraph (d)(3). 3-2

Page 5, Paragraph (e)(2)

STATEMENT: The final stage of any emission control device required under paragraph (e)(1) shall be fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% efficiency for 0.3 microns.

ISSUES:

1. What determination was used to justify the use of HEPA filtration? While it can easily be argued that HEPA filtration should be used in conjunction with processes that generate particulate from toxic materials, there is no basis for requiring HEPA filtration for the grinding of all metals. In general, the size of grinding dust particulate is considered medium (> 1 micron) to large (> 5 micron), however, the size of grinding dust particulate can vary depending on the following factors:
    a. Speed of grinding wheel or disk
    b. Diameter of grinding wheel or disk
    c. Grade of grinding wheel or disk
    d. Pressure that the operator or machine is placing on the metal substrate with the grinding wheel or disk.

    It is irresponsible to assume that all metals will require HEPA filtration without relevant studies to indicate that a significant particle distribution of the dust falls in the 0.3 micron (or less) range for each type of grinding operation.

    The financial ramification on ANY business is onerous. Retrofitting dust collectors with HEPA filtration is very expensive financially (not inclusive of the space required for the HEPA filtration module). On average, the cost per 1000 cfm of dust collector blower will exceed $500 on a large, stationary dust collector; the cost is far greater for small dust collection systems such as self-contained downdraft tables. Therefore, as an example, a facility that is operating dust collection with cumulative air volume of 50,000 cfm would spend $25,000 or more to upgrade their dust collectors. The cost for maintaining HEPA filtration can even be worse. Facilities that are still using "baghouse" dust collectors may have to change their HEPA filters 4-6 times per year due to the inherent inefficiencies of baghouse dust collectors. Using the same example, a facility with 50,000 cfm of baghouse dust collection would spend approximately $6,250 per filter change (or $25,000 - $37,500 annually) in HEPA filters. As I mentioned earlier, money doesn't grow on trees.

2. NFPA Standard 484 does not allow HEPA filtration on dust collectors that are used for the collection of combustible metal dusts if the dust collector is located inside a building. In many cases, depending on the operation and the dust collection equipment, it is not possible to locate the dust collector outside the building. While NFPA Standards are not legally enforceable, the insurance industry is forcing many businesses to follow the standards to mitigate potential insurance liability. This leads to a conundrum for the facility:
    a. Do they follow SCAQMD Rule 1430 and risk losing their insurance?
    b. OR, do they obey their insurance company and get fined by SCAQMD for non-compliance?

3-3

Page 6, Paragraph (f)(2), (3), (g)(1), (g)(3)

STATEMENT (f)(2): Daily wet cleaning or HEPA vacuum of the following:
(f)(3): Monthly wet cleaning or HEPA vacuum of ground surfaces....
(g)(1): No later than one hour.... facility shall wet clean or HEPA vacuum...
(g)(3): Wet clean or HEPA vacuum all metal-contaminated...

ISSUES:

1. Wet cleaning of combustible metal dust is not advised because the collected wet fines generate hydrogen (a highly combustible gas).

3-4

2. What is the point of HEPA vacuuming of non-toxic metals unless it has been proven that a significant volume of grinding or sawing dust is less than 0.5 micron? [Refer to discussion of Page 5, Paragraph (e)(2)] 3-4 cont

Page 7, Paragraph (f)(4)

STATEMENT: Store all materials ……. Including, but not limited to, metal containing waste generated from housekeeping requirements….. in sealed containers, unless located within a total enclosure.
ISSUE: There is an inherent issue with storing combustible dust (aluminum, titanium, magnesium, mixed metals, etc.) in a sealed container; especially if the dust is wet. This practice inadvertently creates a bomb with potential for severe injury and property damage. 3-5

Page 7, Paragraph (f)(5)

STATEMENT: Compressed air cleaning operations shall not be conducted within 30 feet of any metal cutting or metal grinding operation.
ISSUE: There is no logical basis for this rule unless it is more clearly defined. A person who is using a blow-off gun that consumes 10 cfm of compressed air 5 feet from a grinding or metal cutting will affect the air flow less than the wind blowing in from an open doorway. However, someone using an 1" diameter open air hose (flowing 100 cfm @ 80 psi) thirty feet from the processes will likely cause air turbulence. 3-6

Page 7, Paragraph (g)(2)

STATEMENT: Any maintenance and repair activity shall be stopped immediately…. Unless activity is being conducted within an enclosure, temporary enclosure, or total enclosure.
ISSUE: It is very easy for engineers, consultants and bureaucrats to design, recommend and create regulations that have no practicality in real world applications. Allow me to offer up an example (no matter how ludicrous it may seem, it is a real possibility and shows the impracticability of this paragraph):

- Facility has a dust collector that provides dust control for a dozen grinders.
- Santa Ana winds are blowing at 25 mph with gusts up to 40 mph.
- A metal fatigue breach occurs between the clean air and dirty air side of the dust collector but accessible from the outside of the dust collector. The metal fatigue breach is only two inches long, but the breach 15 feet above ground level. Every time the reverse pulse filter cleaning system pulses, a puff of dust escapes from the dust collector.

According to proposed Rule 1430, the facility needs to install a temporary enclosure around the breach so that maintenance can grind the paint off around the breach to facilitate a weld, then grind the weld so that the metal can be prepped for coating (to protect against corrosion). Building a temporary enclosure 15 feet off the ground that is "free of breaks, cracks, or gaps" will take at least four hours to facilitate a repair that will likely require less than two minutes of grinding. Meanwhile, production is shut down for four hours. This is the definition of impracticability and a clear cut example of why regulations are stifling business in California. It seems to me that there needs to be an exclusion that allows maintenance and repair activities that require less than ten total minutes of grinding to not require a temporary enclosure. 3-7

Page 10, Paragraph (i)(2)

STATEMENT: The minimum hood induced capture velocity specified in paragraph (e)(3) shall be accurately measured by static pressure once per operating shift…
ISSUE: This paragraph of the rule is ludicrous at best and punishing at worst. First, it is possible for a facility to have dozens of hoods and operate three shifts per day. It may require a facility to have one full time staffer assigned to handling the testing and the documentation required by this rule. This could easily cost a large facility more than $150,000 annually. (Remember that money doesn't grow on trees.) 3-8

Additionally, the hood velocity will vary depending on the static pressure on the entire system. Therefore, as the filters get dirty, there will be a change in velocity at the hood. It is an impossible task for a facility to maintain a uniform hood velocity. An easier, more practical and more cost effective approach would be to require a facility to achieve the desired hood velocity with clean filters in the dust collector in order to complete the permit application. The static pressure of the filters is notated. Once the static pressure across the filters has increased to specific point (typically +2" for cartridge filters), the filters must be changed. If the District wants to have the facility test the hood velocity prior to changing the filters so a baseline hood velocity (with dirty filters) can be established, that would be acceptable. Beyond this, testing hood velocity annually should be sufficient. 3-8 cont

Page 10, Paragraph (i)(3)

STATEMENT: The pressure drop across the HEPA filter within -1/2 times to +2 times the inches of water of the value established during the performance test….

ISSUE: You cannot have a negative value unless there is a breach (which negates the use of a HEPA filter) and a positive value above +1 indicates that the HEPA filters are overloaded. 3-9

Page 11, Paragraph (i)(4)

STATEMENT: For each emission collection system subject to this subdivision, a periodic smoke test shall be conducted, unless performing such test presents an unreasonable risk to safety, at least once every three months…

ISSUES:

1. What is the point of the smoke test? This needs to be clarified.
2. What is the justification that this test needs to be performed every three months? This presents additional unnecessary time, documentation and money to the facility owner.

3-10

Page 11, Paragraph (k)(1)

STATEMENTS:

1. Installed within 50 feet of entrance of facility…
2. Measures at least 16 square feet…
3. Displays lettering at least 3 inches tall…

ISSUE: Has SCAQMD given consideration that these parameters may not meet with local signage code? Which "bureaucracy" takes precedence? 3-11

ADDITIONAL ISSUES:

1. Why are exclusions not included in the proposed rule? How is a facility owner, concerned business or concerned citizen supposed to know the full extent of the rule if the exclusions are not included? I think that the proposed rule needs to be reissued with exclusions included and a reasonable amount of time allocated for comments and questions of the complete proposed rule.
2. In creating a rule, SCAQMD does not necessarily apply science in creating the rule. For example, it was arbitrarily determined that all dust collection in Rule 1430 must have HEPA filtration, yet there is no justification for it given that many facilities are not working with toxic metals and there is no particle size distribution testing done to indicate that much if any of the grinding dust generated is finer than 0.5 micron (a standard for most cartridge filters).
3. In creating a rule, SCAQMD does not take adequate consideration of the following:
    a. Financial impact on the business that must comply with the rule
        i. Capital equipment and building expenditures
        ii. Implementation, operation, monitoring and record keeping labor costs
        iii. Annual maintenance costs
        iv. Ability to be able to compete with competitors in other states

3-12

b. Rule conflicts with local codes (building, signs, etc.)
c. Rule conflicts with other regulations or standards
   i. Cal-OSHA
   ii. OSHA
   iii. NFPA

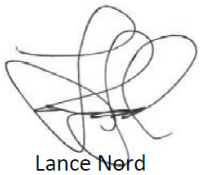
3-12 cont

Ms. Nakamura… I can appreciate the desire for SCAQMD to provide a service to the region by improving the air quality. However, it is incumbent upon your organization to provide concise rules that do not adversely affect business to the extent that they cannot financially compete in the market place thereby shutting down or leaving the state. When this happens, our air might be cleaner, but there are fewer working people able to enjoy this clean air. We do not need new rules for the sake of justifying a bureaucracy and the rules need to be tempered with the clarity of financial impact on the individual businesses and industry as a whole.

3-13

I would appreciate it if you would add me to your mailing list (lnord@solutions4blast.com). Please don't hesitate to contact me if you have any questions or comments.

Respectfully,



Lance Nord
President

3-1 Response: As SCAQMD staff started the rule making process for Proposed Rule 1430, it became very apparent that the metal grinding operations at metal forging facilities can be a very intense operation with billet grinders, swing grinders, and multiple hand grinders. These grinding activities are currently unregulated. As a result, when the rulemaking began there were four metal forging facilities that were conducting their grinding operations in the open air with no pollution controls. Although some facilities did have pollution controls, there are no permit conditions to ensure that the pollution controls are adequately sized, has the proper ventilation, or any source testing or other monitoring to ensure proper operation and maintenance. Unfortunately, the community that surrounds these facilities are impacted from fugitive metal particulate emissions from these sources.

The SCAQMD staff is always sensitive to the cost of compliance. The average annual cost is estimated to be about $345,000. Larger facilities will experience higher costs. The SCAQMD staff has prepared a socioeconomic analysis for Proposed Rule 1430.

3-2 Response: The proposed rule has been modified to remove the reference to "cross-draft." Paragraph (d)(2) requires that "…all metal grinding or cutting operations in the building until all the requirements specified in paragraph (d)(3) are met. Paragraph (d)(3) has specific requirements for the total enclosure.

3-3 Response: SCAQMD staff has completed a socioeconomic analysis for Proposed Rule 1430 that determined the capital investment cost for an emissions control system with a cumulative air volume of 50,000 CFM and HEPA filtration would be approximately $540,000 with an additional annual operating cost for HEPA filtration of approximately $78,000. This value exceeds the commenter's estimated compliance cost for HEPA and has been accounted for in the socioeconomic analysis conducted to assess the cost impacts of Proposed Rule 1430.

Based on discussions with another pollution control provider, HEPA filters with a baghouse can be safely designed. To ensure there is no conflict with SCAQMD's proposed rule and the National Fire Protection Association, Proposed Rule 1430, paragraph (e)(2) has been modified and states that, "The final stage of any emission control device required under paragraph (e)(1) shall be fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety."

3-4 Response: Housekeeping provisions are an effective tool to ensure that fugitive dust is not tracked or is not re-entrained where it can impact off-site neighbors. As discussed in Chapter 1, ambient air monitors and glass plate samples have shown the presence of a variety of metal particulates, some of which are toxic such as nickel, cadmium, and arsenic. The SCAQMD staff believes that the housekeeping measures are needed to minimize fugitive dust.

3-5 Response: Proposed Rule 1430 does not require that the metal containing waste be stored in a sealed container. Under Proposed Rule 1430, the operator can either store metal containing waste generated from housekeeping in a sealed container or in any container, provided the container is within a total enclosure.

3-6 Response: The overall objective of this provision is to minimize the opportunity for fugitive dust to become airborne. Under Proposed Rule 1430, compressed air is allowed if the compressed air cleaning operation or dry sweeping is conducted under an emission control device.

3-7 Response: Proposed Rule 1430 does not require an operator to install a temporary enclosure to conduct maintenance and repair activities. The proposed rule does specify that if certain maintenance and repair activities on the pollution control devices are being conducted outside of an enclosure, that specific housekeeping provisions must be implemented.

3-8 Response: Measuring the static pressure is a quick measurement. Staff has modified this provision to requirement to require that the static pressure be measured once per day, instead of once per shift.

3-9 Response: The point of measuring the pressure drop across the HEPA filter is to identify a breach or if the HEPA filter is overloaded.

3-10 Response: The SCAQMD staff has found that smoke tests are an inexpensive tool to ensure that the air flow is appropriately moving towards the pollution control device. Use of smoke tests has been required under other metal working rules such as Rule 1469 for metal plating facilities, and Rules 1420.1 and 1420.2 for large lead acid-battery recyclers and lead melting facilities.

3-11 Response: SCAQMD has required similar signage requirements in other rules such as Rule 410 for material recovery facilities, Rule 403 for dust, and Rule 461 for gasoline dispensing facilities. Signage requirements were added in Proposed Rule 1430 based on input SCAQMD staff had received at a public meeting were community members commented that they do not know who to call if there is an air quality issue. Subdivision (k) allows the owner or operator to submit a written request for alternatives to signage requirements for the Executive Officer's approval.

3-12 Response: Proposed Rule 1430 incorporates specific exclusions in the applicability and in key definitions. For example the definition of hand grinding excludes grinders with a disc size 1 inch or less, and the definition of metal grinding operation excludes hand grinding that is for quality control or quality assurance to remove small imperfections on metal parts.

Proposed Rule 1430 does not require all sources to have HEPA filtration. Under paragraph (e)(3), if a facility can meet specific criteria such as the number and type of grinding and the toxic screening emissions for permitting, the facility may alternatively fit the final station of any emission control device with a filter media rated by the manufacturer to achieve a minimum of 98% control efficiency.

Regarding cost impacts, please refer to the Draft Socioeconomic Impact Report for Proposed Rule 1430. Cost impacts take into consideration capital equipment, construction of total enclosures, and operation and maintenance costs.

Proposed Rule 1430 includes provisions to ensure installation of pollution controls are not in conflict with OSHA or NFPA requirements.

3-13 Response: Facilities that are currently grinding in the open air with no pollution controls will have higher costs to build a total enclosure and install pollution controls. Implementation of Proposed Rule 1430 will reduce the release of metal particulate, of which some is toxic, from grinding operations. Proposed Rule 1430 is an important rule that is needed to reduce metal particulate emissions from metal grinding and cutting operations at metal forging facilities.

Comment Letter #4
Weber Metals
December 13, 2016

WEBER METALS
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Aluminum and Titanium Forgings
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13 December 2016

Ms. Susan Nakamura
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Attention: Mr. Dan Garcia

Re: Comments on Proposed Rule 1430, Control of Emissions from Grinding Operations at Metal Forging Facilities

Dear Ms. Nakamura:

Weber Metals, Inc. produces aluminum and titanium forgings for the aerospace, defense and commercial airline industries. Based in Paramount, we supply our customers with quality forged products that consistently meet or exceed all applicable customer and regulatory requirements, industry standards, and contractual specifications. We achieve this objective by continually improving our internal process controls and the effectiveness of our Quality Management System through clear understanding of the individual responsibilities and an ongoing self-assessment.

Weber Metals is committed operating in an environmentally responsible manner and with the development of our 60,000-ton press project we are modernizing key aspects of our facility to meet best available standards. We support the South Coast Air Quality Management District's ("District") development of Proposed Rule 1430, Control of Emissions from Grinding Operations at Metal Forging Facilities (PR1430). Weber Metals would be impacted by this rule, and we support a rule design that provides affected facilities a clear and achievable pathway to compliance since the operations covered by the rule have historically been exempt from District regulation under Rule 219. To that end, we respectfully offer the following comments on the 1st draft version of PR1430 which was released on 30 November 2016. 4-1

1. **The rule should not apply to low volume activities with very low emissions. Where such operations can be shown to have trivial emissions, they should be excluded from PR1430.**

The stated purpose of this rule is to reduce toxic and particulate matter emissions from dry metal grinding and metal cutting operations at metal forging facilities. But as currently drafted, PR1430 does not differentiate larger volume operations which would reasonably be expected to have meaningful emissions from low volume (or intermittent) operations that are likely insignificant in terms of emissions. Including these low volume operations in the rule could result in excessive compliance costs for new emissions controls and testing requirements for emissions which may be insignificant in health terms. 4-2

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We recommend that the District develop a low volume/low use exemption for PR1430, or develop a process in the rule by which facilities can off-ramp by providing a case-by-case, health-based justification for exclusion for certain operations. 4-2 cont

2. PR1430 should prioritize the control of emissions from metal grinding operation. The District should reconsider the emissions potential associated with metal cutting operations before subjecting them to the same standard as metal grinding operations. The requirements of Section (e) should be revised.

As currently drafted, PR1430 would require all metal cutting operations to be controlled in an equivalent manner to metal grinding operations. Based on our many decades of experience, metal grinding operations should be the primary focus for new (or modified) emissions controls and source tests. Conversely, metal cutting operations have a significantly lower potential for emissions. In particular, band saw cutting generates metal chips but these are of such large dimensions (i.e., greater than 1 mm) that they fall to the ground immediately and are swept up or collected in a chip collection system. 4-3

We recommend the following changes to PR1430 Section (d) and (e): 4-3 cont

(d) Total Enclosures

(1) An owner or operator of a metal forging facility is prohibited from conducting any metal grinding ~~and metal cutting~~ operations outside of a temporary enclosure, enclosure, or total enclosure.

(e) Metal Grinding Emission Requirements

(1) No later than [one year from Date of Rule Adoption], the owner or operator of a metal forging facility shall vent emissions from all metal grinding ~~and metal cutting~~ operations to an emission control device that does not exceed a PM outlet concentration of 0.01 grains of particulate matter per dry standard cubic foot as determined by the most recent District-approved source test conducted on behalf of the facility or the District pursuant to subdivision (h).

…

(3) The owner or operator of a metal forging facility may alternatively fit the final stage of any emission control device required under paragraph (e)(1) with filter media rated by the manufacturer to achieve a minimum of 98% control efficiency for 0.3 micron particles if the owner or operator:

(A) does not conduct billet grinding~~,~~ or swing grinding;~~, torch cutting, or metal cutting;~~

3. The one-size-fits-all proposed standards for metal cutting operations are not practically achievable. We recommend revisions of the definition of metal cutting in Section (c)(15).

As noted, band saw cutting generates metal chips but these are of such large dimensions (i.e., greater than 1 mm) that they fall to the ground immediately and are swept up or collect in a chip collection 4-4

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system. And some metal cutting conducted at forging facilities involves extremely hot ingots. This is typically done near a press, in the middle of the forging process. Such "hot" cutting cannot be safely performed within a total enclosure and also cannot be safely vented to a baghouse. For these reasons, we recommend revisions of the "Metal Cutting" definition to: (a) differentiate abrasive cutting from band saw cutting since metal cutting with a band saw does not generate smoke or particulates; and (b) to exclude hot cutting from the definition. We recommend the following changes to PR1430 Section (c)(15): 4-4 cont

(c)(15) METAL CUTTING means for the purposes of this rule a process used to abrasively cut starting ingot or billet stock to length in preparation for the forging process and also to trim forged parts to size without the use of a metal removal fluid. Vertical band saw cutting and hot cutting are not considered metal cutting for purposes of this rule.

4. Hand Grinding should be limited to those grinders involving discs greater than 3" in diameter. We recommend revisions of the definition of metal cutting in Section (c)(15)

Discs greater than 1" are used by autobody shops, weld shops, construction, homeowners, and many others not included in this regulation. We recommend that Section (c)(19) be revised as follows: 4-5

(11) HAND GRINDING means metal grinding using a hand tool, including hand powered tools, that prepares, cuts, grinds and polishes or finishes forgings with a disc greater than 3-inch ~~1-inch~~ diameter. Examples include angle grinders, internal diameter "I.D." grinders, disc grinders, and side grinders.

5. Section (d)(1) should be revised to exclude maintenance repairs requiring less than 3 days to accomplish.

It is impractical to set up a total enclosure for every instance of repair that exists on a piece of equipment that is not movable. Partial collection is possible but some equipment is too large to put a roof over. We recommend the following change to Section (d)(1): 4-6

(d) Total Enclosures

(1) An owner or operator of a metal forging facility is prohibited from conducting any metal grinding ~~and metal cutting~~ operations outside of a temporary enclosure, enclosure, or total enclosure. This requirement shall not apply to maintenance repairs requiring less than 3 days to accomplish~~.~~

6. Section (e)(2) should be revised to limit the HEPA filter requirement to metals which are compatible with that technology. We recommend that Section (e)(2) be revised to limit the use of HEPA technology to those operations where such technology is permitted under applicable OSHA and NFPA standards.

As noted at a recent California Metals Coalition meeting, HEPA is generally not compatible for control of titanium, magnesium, or aluminum fines. The applicable NFPA standards will not allow dry powder to 4-7

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be collected due to the chance for spontaneous combustion when very small particles are exposed to water or other oxidizers. Without NFPA approval, the metal forger cannot get insurance for the equipment and without NFPA approval, the city will not issue a building permit. We recommend that Section (e)(2) be revised to limit the use of HEPA technology to those operations where such technology is permittable under both OSHA and NFPA standards. 4-7 cont

7. **Source testing requirements should be differentiated to focus testing on source operations with higher emissions, and focus testing on pollutants of concern.**

As currently drafted, the source testing requirements in PR1430 would apply the same requirements to all affected source operations. This would be regardless of whether the source has any considerable controlled emissions, and would require testing the same array of pollutants even if certain pollutants were known not to be present at the source. As an example, the rule would require ongoing hexavalent chromium testing even where the compound is known not to be present. This one-size-fits-all approach could cause a significant degree of unnecessary source testing. And it would also create considerable compliance expense to metal forging facilities without environmental purpose. 4-8

Weber recommends that Section (h) be revised to focus source testing requirements on those sources with considerable levels of controlled emissions. Additionally, we recommend that Section (h)(2) be revised such that protocols can be approved on a case-by-case basis to exclude pollutants not reasonably suspected at the source.

8. **We support implementing PR1430 as quickly as possible. However, we are deeply concerned that certain timetables in the current draft of PR1430 are simply not achievable. We request that District Staff work with the affected industry to develop achievable deadlines for compliance with PR1430's various requirements.**

There are a number of sections of PR1430 which would require compliance within either six months or twelve months. These include standards which would potentially require the engineering, design and construction of new structures and/or emissions control equipment. Since PR1430 was only released in draft form on 30 November and is not final, affected facilities have a limited understanding of what will ultimately be needed for the new or modified operations. And while such grinding operations and associated emissions controls have historically been exempt from District permit pursuant Rule 219, we understand that construction and installation of such equipment would now require a District Permit to Construct once PR1430 is adopted. The District's permitting process often takes 6-9 months by itself. 4-9

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For these reasons, we are very concerned that the timetables proposed in Section (d)(3), Section (d)(4), Section (d)(8), and Section (e)(1) may simply be unachievable given the need for permits and the potential need for construction/installation. Generally speaking, we believe it would be reasonable to require compliance "six (6) months after Permit to Construct issuance" for those requirements involving new or modified enclosures and/or control equipment. We request that District Staff work with the affected industry to develop achievable deadlines for compliance with PR1430's various requirements. 4-9 cont

Weber Metals appreciates the opportunity to submit these comments. Should you have any questions or wish to discuss further, please do not hesitate to contact me at (562) 602-0260 ext. 259

Sincerely,

Doug McIntyre
Vice President, Plant Engineering

Cc: Rick Creed, Weber Metals
William Cacheris, Weber Metals
Queen Uchekwe, Weber Metals
Scott Weaver, ERM

4-1 Response: Thank you for your comment. The SCAQMD appreciates your comments and staff is working to provide a proposed rule that will provide a clear and achievable pathway to compliance. The SCAQMD appreciates that Weber Metals has allowed staff to visit your facility on multiple occasions to observe Weber Metals' grinding, cutting, and forging operations.

4-2 Response: Although Proposed Rule 1430 does not include a low volume/low use exemption, there are provisions in the proposed rule that are designed to address specific grinding operations that would be low volume/low use. The proposed rule includes in the definition of "hand grinding" excludes grinders that have a disc less than or equal to 1-inch in diameter and there are special provisions for grinding pieces that have a surface area less than 25 square inches.

4-3 Response: Staff modified the definition of "metal cutting" in Proposed Rule 1430 to include "a process used to *abrasively* cut starting ingot, log, or billet stock…" By including the word abrasively, band saw cutting would not be subject to the provision for other cutting operations where fugitive metal dust is created from the abrasive nature of the cutting operation.

4-4 Response: Please see response to comment #4-3. The addition to comment #4-3 to include only abrasively cutting operations is intended to exclude vertical band saw cutting and hot cutting operations. Staff visited Weber Metals on

December 22, 2016, to observe the band saw cutting and hot cutting operations, and agrees that these operations primarily generate large metal chips and shavings, where the focus of this proposed rulemaking is on metal particulate that can become airborne.

4-5 Response: The proposed rule applies to metal grinding operations and metal forging facilities. Auto body shops, weld shops, construction, and home owners are not affected by the proposed rulemaking. Proposed Rule 1430 does include a provision that has special provisions for metal forging facilities that are grinding pieces that have a surface area less than 25 square inches. In addition, PAR 1430(b) excludes grinding activities conducted to maintain or repair equipment at the facility.

4-6 Response: The applicability section excludes grinding activities conducted to maintain or repair equipment at the facility. Proposed Rule 1430 requires that metal grinding, metal cutting, and small metal hand grinding operations be conducted within a total enclosure. The definition of metal cutting was modified to include abrasively cutting operations.

4-7 Response: In regards to the requirement to install a final stage of the emission control device with HEPA filters, Proposed Rule 1430 states under paragraph (e)(2) that the system should be designed "in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety." There are a variety of options that a facility can comply with Proposed Rule 1430 without being inconsistent with NFPA guidelines such as use of spark arrestors or installation of the baghouse outside of the total enclosure, which is the typical practice based on staff's observations.

4-8 Response: Proposed Rule 1430 includes a provision that allows a facility to forego the hexavalent chromium source test if they can demonstrate that the total chromium level is less than 1 percent in the baghouse catch. The facility would be required to test the baghouse catch at each change out.

4-9 Response: The compliance time under Proposed Rule 1430 for installation of pollution controls for grinding operations and pollution controls for total enclosures with negative air have been revised to 6 months after a Permit to Construct is issued.

Comment Letter #5
California Metals Coalition
December 19, 2016

CALIFORNIA METALS COALITION

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To: Ms. Susan Nakamura
Sent via email: snakamura@aqmd.gov
Mr. Eugene Kang
Sent via email: ekang@aqmd.gov
Mr. Daniel Garcia
Sent via email: dgarcia@aqmd.gov

CC: SCAQMD Board of Governors
Wayne Nastri, Executive Officer

December 19, 2016

RE: Comments on Proposed Rule 1430: Metal Grinding at Forging Operations

The California Metals Coalition (CMC) appreciates the opportunity to submit written comments regarding the South Coast Air Quality Management District's (SCAQMD) Proposed Rule 1430: *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities.* CMC has been engaged in the pre-rulemaking process since 2013, as well as the formal rulemaking process initiated with the first working group meeting on October 7, 2015. The comments in this letter are in response to the second draft rule language, which was released **Friday, December 16, 2016**. 5-1

First and foremost, CMC has stated at the SCAQMD public working group meetings, and reiterates in this letter, that we support the rulemaking for Proposed Rule 1430.

Secondly, CMC has stated at the October 26, 2016 public workshop in Diamond Bar and December 1, 2016 public workshop in Paramount that process grinding operations conducted outdoors are not an acceptable practice for the metalworking industry.

CMC is a statewide organization with approximately 250 members. The majority of CMC members meet the definition of a small business. CMC holds quarterly roundtables, most recently on December 9th in Paramount, to guide all members on best management practices, housekeeping, and emission control technologies available to the industry. Gathering as an

industry allows us to learn from one another. It is especially helpful for us to meet at larger metalworking facilities in centralized areas. Companies that take the time to attend a 3-hour CMC quarterly roundtable know that we are advocating for them to learn, network, and stay ahead of the compliance curve.

Finally, SCAQMD staff is quickly moving to bring Proposed Rule 1430 in front of the Governing Board at the earliest available date, March 3, 2017. CMC submits its written comments with the expectation that staff will review and address comments without delaying the rulemaking. This is an aggressive timeline and goal, but CMC is committed to being part of the solution. 5-1 cont

Comment #1: Clear Communication on Hexavalent Chromium and Metal Grinding

The following comment reflects CMC's verbal comments from the working group meetings on September 14, 2016 and October 26, 2016.

CMC shares the public's concern on the elevated levels of hexavalent chromium detected in the city of Paramount. Metal forging employees work daily in industrialized areas of Southern California, and employee families commonly reside in the area. More importantly, the residents, students and businesses that call Paramount home have a right to clean air.

It is equally important to maintain clear communication on the sources of hexavalent chromium at metalworking facilities, how hexavalent chromium is generated at metalworking facilities, and what air district rules will reduce the dangerous levels.

Based on the nature of metal grinding and expanded air monitoring data disclosed by the SCAQMD, it is our understanding that the dangerous levels of hexavalent chromium in Paramount will not be reduced by focusing on grinding operations at metal forging facilities. 5-2

For hexavalent chromium to be generated by metal grinding, one must first understand how hexavalent chromium is created. To begin, the first indicator is the presence of chromium in its elemental form. Chromium can be added to molten ferrous alloys to meet certain metallurgical requirements. A common example is stainless steel, which is generally 80% iron, 15% chromium and 5% nickel.

The presence alone of chromium in the microstructure of the metal does not mean hexavalent chromium has been created. Hexavalent chromium is generated when the metal is heated to a degree very near or at its melting point, which is around 1450 degrees centigrade. To demonstrate the heat threshold to convert chromium into hexavalent chromium, one can look at stainless steel metal cookware. Stainless steel metal cookware is sold and used in millions of

2

households, but the temperature of cooking does not convert chromium into hexavalent chromium.

The second indicator is whether enough heat is generated during grinding on metals containing chromium to generate hexavalent chromium. Grinding operations are predominantly finishing operations done once the product has solidified. An operator will use a hand grinder or table grinder to finish the smaller metal parts. If the part is larger, a swing grinder will be used.

Since proper grinding is done at temperatures below melting point, it is unlikely that a metal forging facility will convert chromium to hexavalent chromium at the point of grinding. The heated friction between the grinding wheel and metal product can get hot, but is not the temperature levels seen at melting point.

This scientific examination of hexavalent chromium follows SCAQMD's chronological data gathering and discoveries. SCAQMD's November 4, 2016 report titled *Expanded Monitoring of Hexavalent Chromium in Paramount—Assessment of Initial Data*[1] states on page 1 that "additional investigation was needed to determine the source of the hexavalent chromium." The report goes on to chronicle the expansion of air monitoring "to narrow and identify the specific source or sources of hexavalent chromium in the area." It concludes on page 4 by stating "the purpose of the expanded monitoring was to locate the sources of hexavalent chromium." 5-2 cont

Staff should address the following science-based comments on hexavalent chromium and grinding:

A. Chromium must be present in the alloy to potentially generate hexavalent chromium. But proposed Rule 1430's definition of "(13) Metal" lists examples such as "metals include, but are not limited to, iron, steel, and their iron-based alloys, stainless steel, aluminum, copper, brass, bronze, gold, silver, zinc, tin, lead, platinum, nickel, chromium, cadmium, manganese, tungsten, and titanium and their non-ferrous alloys". Proposed Rule 1430 must be clear on what alloy(s) can potentially be converted to hexavalent chromium.

B. Chromium is converted to hexavalent chromium at processes with a certain temperature threshold, more specifically at the melting point of the alloy. Proposed Rule 1430's definitions of "(2) Billet Grinding," "(10) Hand Grinding", "(14) Metal Cutting", "(22) Small Hand Grinding," "(23) Stand Grinding", and "(24) Swing Grinding" will not meet this temperature threshold, but are included in the rule as sources of hexavalent chromium emissions. Scientific justification is expected in Proposed Rule 1430 for how grinding and cutting generates hexavalent chromium.

[1] http://www.aqmd.gov/docs/default-source/compliance/Carlton-Forge-Works/final-paramount-ass-initial-monitoring-data-10416.pdf?sfvrsn=4

C. Proposed Rule 1430 has been promoted as a toxics rule, and is placed in the "1400" category of SCAQMD rules. On October 26, 2016, staff focused much of the working group meeting on hexavalent chromium and discussed the use of CARB test method 425. It would be helpful to all stakeholders to release SCAQMD's lab reports, not just the results, from the air monitors. The lab reports are arguably more important than the data summaries. This is important communication because Proposed Rule 1430 states it will reduce "toxic" emissions, ex: hexavalent chromium.

D. SCAQMD requires in Proposed Rule 1430 that point source testing be conducted under "(h) Source Tests". But CMC is unaware of SCAQMD conducting its own point source tests to support the conclusion that hexavalent chromium is generated at grinding operations. It would be expected that SCAQMD has conducted point source testing on hand grinding, stand grinding, swing grinding, and billet grinding during the multi-year rulemaking process. This is additionally important because fugitive emissions do not occur without source emissions. Bag house dust, glass plates on roof tops, and neighborhood air monitors offer cumulative data results from multiple processes or multiple neighboring sources. SCAQMD should state whether or not it has conducted point source testing at metal forging process grinding operations. And if this data has been collected, the lab data—especially for hexavalent chromium—should be shared with the public.

5-2 cont

Comment #2: Hexavalent Chromium Source Testing Requirement at Metal Forging Facilities that Do Not Generate Hexavalent Chromium

The following comment reflects CMC's verbal comments from the working group meeting on October 26, 2016.

Proposed Rule 1430, section "(h)(1)(B) Source Tests" is required every 48 months for hexavalent chromium and multiple metal emissions. It is unclear why all grinding operations would be pre-determined to generate hexavalent chromium. Based on "Comment #1", a scientific explanation for the assumed creation of hexavalent chromium at all grinding operations has not been established by the SCAQMD staff. CMC suggests that unless the SCAQMD can determine that hexavalent chromium is reasonably present at all point source grinding operations, this subsection should be amended.

5-3

Comment #3: Defining Volume Metrics for a Metal Forging Rule

The following comment reflects CMC's verbal comments from the working group meetings on September 14, 2016, October 26, 2016, and December 1, 2016.

5-4

At the last three public workshops, the SCAQMD staff noted that the 22 metal forging facilities visited demonstrated unique quantities of metal grinding particulate matter being generated. Volume of metal grinding was how staff distinguished a new rule for metal forging facilities.

Examples provided by staff included: the significant amount of particulate matter created during billet grinding, the size or surface area of the metal products being grinded at metal forging shops, and the intensity of grinding being conducted at a metal forging shop. Based on staff's presentation of this information, volume calculations were expected to be included in Proposed Rule 1430 to support these conclusions.

As an example, "(2) Billet Grinding" removes inches of metal from large metal billets that can measure 32 square inches and 10 feet long. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

As a second example, "(24) Swing Grinding" is used on larger metal products. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

As a third example, "(23) Stand Grinding" is for small parts that can be easily handled by an individual worker. Grinding occurs at a standing grinding table and the activity typically includes taking off the rough edges (approximately 1/8 inch) from the part. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

5-4 cont

As a fourth example, "(10) Hand Grinding" is for smaller surface areas or polishing. The hand grinder is portable, and conducted on a part much smaller than swing grinders. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

Finally, as a fifth example, "(22) Small Hand Grinding" is similar to hand grinding, but acknowledges the need to define total surface area. A volume calculation can be established to estimate the volume of particulate matter being created. Intensity, time/duration, and particle size are also factors within the calculation.

Overall, Proposed Rule 1430 seeks to regulate several different types of grinders that perform very different functions, and create vastly different volumes of particulate matter. Relying on Proposed Rule 1430's single solution approach for all grinding operations does not match the unique SCAQMD staff field reports conveyed at working group meetings. CMC expects that the SCAQMD will create a volume metric and match the volumes of particulate matter to the various proposed solutions within Proposed Rule 1430.

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Comment #4: Sensitive Receptors, Zoning, and SCAQMD Advocating for Public Health

Proposed Rule 1430, section "(d)(8) Total Enclosure with Negative Air" uses a 300-foot sensitive receptor measurement, or 1,000-foot school measurement, to require a total enclosure with negative air. This type of measurement is used by several air agencies in California, including the California Air Resources Board (CARB), to keep new schools, residences, hospitals, or prisons away from facilities with toxic metals, such as hexavalent chromium.

CMC is not suggesting changing this requirement in Proposed Rule 1430, but must express its significant and ongoing frustration with zoning decisions that continue to be made by select cities throughout the South Basin.

Nearly all CMC members have occupied industrial areas of the South Basin long before the construction of parks, schools, residences, hospitals, or businesses with sensitive receptors. CMC has countless situations where metal facilities acquire a new neighbor, and the new neighbor is a sensitive receptor. 5-5

As an example, one of our light industrial metal working members recently made a $10 million equipment investment in his company only to have a swimming school, day care, and restaurant approved by the city and built within 300 feet.

CMC asks the SCAQMD to become a stronger advocate for public health by getting directly involved in city planning decisions. The current approach is not effective, especially if the SCAQMD is relying on advisories. This advocacy will require the use of SCAQMD's many lobbyists in Sacramento to create the necessary change for our future.

Comment #5: Proposed Rule 1430's Trigger of City Building Permits, CEQA, etc.

The following comment reflects CMC's verbal comments from the working group meeting on October 26, 2016.

Many of the structures at metal forging facilities are not immediately conducive to total enclosures, bag houses, secondary filters, and especially negative air. Changes will need to be made to the building to allow the requirements within Proposed Rule 1430 to be met. It is expected that these changes will trigger building permit requirements from the city, CEQA review, fire departments, and even SCAQMD's own permitting process. Here are some examples: 5-6

- "(d) Total Enclosure"
- "(d)(8) Total Enclosures with Negative Air"
- "(e)(1) Metal Grinding Emission Requirements" emission control device

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- "(e)(2) & (3)" HEPA filters or an equivalent secondary control device

Under Proposed Rule 1430, each of the bulleted items above has completion requirements of "no later than [6 months after Date of Rule Adoption]" or "no later than [12 months after Date of Rule Adoption]."

This requirement will be a challenge and likely result in a violation of the rule if the SCAQMD does not take into account the time it takes to receive a permit from the city, conduct a CEQA review, pass fire department or other local agency reviews, and complete the SCAQMD permitting process. The 6-month and 12-month deadlines cannot be met without considering the aforementioned permitting and review requirements. 5-6 cont

CMC suggests amending Proposed Rule 1430's language to acknowledge the legal steps required before starting to build a total enclosure, total enclosure with negative air, bag house, emission control device, or HEPA filter.

Comment #6: December 9th Metal Grinding Public Advisory Notice

While Proposed Rule 1430's language does not include the December 9th Public Advisory Notice on outdoor metal grinding, the content of the notice is directly related to this proposed rule. As a result, CMC has included comments in this letter.

The South Coast Air Quality Management District (SCAQMD) released a public notice dated Friday, December 9th, that advised "all grinding operations" to be conducted indoors. As stated in the opening of this comment letter, CMC agrees with—and has proactively promoted to its members—that process grinding operations should not be conducted outdoors.

But the public advisory does not make any distinction between process grinding operations and repair or maintenance. This is confusing to the industry, and likely confusing to the public, especially when the advisory states "emissions may increase health risks for receptors." 5-7

Repair or maintenance grinding is conducted to keep emission control systems properly operating, to keep containers properly functioning, to fix structures, to avoid accidents, to protect workers, or to simply keep operations running safely. The same grinding equipment (most commonly hand grinders) that is used for process grinding operations may be used for repair or maintenance. The distinction is the duration of the activity, volume of particulate being produced, item being grinded, and purpose of the grinding. The SCAQMD needs to properly advise this in future notices.

Finally, SCAQMD should advise all the operations that conduct metal grinding (See Comment #10) since it is not limited to metalworking facilities.

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Comment #7: Avoiding Unintended Consequences of (k) Signage

The following comment reflects CMC's verbal comments from the working group meeting on December 1, 2016.

Proposed Rule 1430 requires all metal forging facilities to install a 16 square foot sign that says "TO REPORT ODORS FROM THIS FACILITY, CALL EITHER [FACILITY CONTACT PHONE NUMBER] OR THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG"

If SCAQMD's intent is to educate the public on the SCAQMD phone number and inspection resources, then direct mailing (especially in impacted industrialized areas) of a SCAQMD brochure is the best way for an individual to receive this information. A second option is to include an informational ad in the local newspaper. A third option is to hold more town hall meetings. But placing a sign on 22 metal forgers—which are a small fraction of the 27,000 permitted facilities that are also potential sources of odors across the four counties of Los Angeles, Orange, San Bernardino and Riverside—it is doubtful how this will achieve the goal of educating the public about the SCAQMD resources.

If SCAQMD's intent is to have the community member be able to quickly contact the metal forging facility, then the verbiage of the sign should be changed. The sign should say "TO CONTACT [NAME OF FACILITY] ABOUT ANY CONCERNS, PLEASE CALL [FACILITY CONTACT PHONE NUMBER]." 5-8

If SCAQMD's intent is to pre-determine that all metal forging facilities inherently have nuisance odors, or that odors in a neighborhood should first be directed to a metal forging facility, CMC has to question SCAQMD's goal for singling-out 22 metal forgers in this new rule.

CMC's primary concern isn't in regards to how SCAQMD handles confirmed odor nuisances, but rather how SCAQMD records an unconfirmed complaint. An unconfirmed complaint means that either the odor/air contaminant release could not be detected, or the source/facility cannot be determined.

Although the source of the odor could not be detected, the SCAQMD records the name of a company. This recording system places a negative mark on the business. It is not uncommon for the SCAQMD system to accumulate 10, 50, 100 or even 200 unconfirmed odor complaints. The media, elected officials, lawmakers, or public see this log of unconfirmed complaints and conclude that action must be taken. Unconfirmed odor complaints are damaging to an individual business.

One simple solution is to change how SCAQMD logs unconfirmed odors. Unconfirmed odors should be recorded by the nearest cross-streets. An example would be to record, "an unconfirmed

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odor was alleged at the cross streets of Paramount Blvd and Alondra Blvd". Until the issue of unconfirmed odors is rectified by the SCAQMD, unintended consequences are likely to occur.

Section "(k) Signage" should be amended or omitted based on SCAQMD's response to the aforementioned concerns. 5-8 cont

Comment #8: (j)(1) Recordkeeping

Section (A) requiring "monthly records indicating the weight of metal processed by the facility" should be removed or made confidential. California metal forging companies compete around the world. Publicly disclosing the amount of metal processed by the facility is a competitive disadvantage. In addition, sellers of metal to the metal forging facility can use this information to potentially determine the demand side of an economic transaction. Overall, it is unclear how publicly reporting the weight of the metal processed will further the goals of Proposed Rule 1430.

Section (F) requires a "log of reports…regarding odors or other air quality related issues." This requirement may also have unintended consequences. When a metal forging facility works with a neighbor to resolve a potential odor or air quality issue, this should be encouraged by the SCAQMD—not reported under a rule requirement. In certain situations, this report log could be misconstrued to make false determinations about compliance or health risks. 5-9

Along the lines of Comment #7, the industry is becoming more and more sensitized about how unconfirmed odor complaints are being recorded by the SCAQMD. Section (F) just creates a different layer of scrutiny similar to unconfirmed odor complaints and should be amended or omitted.

Comment #9: Benefits of Good Housekeeping; Compressed Air; Dry Sweeping:

The following comment reflects CMC's verbal comments from the working group meeting on October 26, 2016.

Proposed Rule 1430, section "(f) Housekeeping Requirements" will be the most effective part of this rule. Particulates from metal grinding and metal cutting are predominantly heavier particles that fall to the ground. If they are not cleaned up, contained, and/or stored, then the potential to track particulate matter out of the facility will increase. The SCAQMD should emphasize housekeeping as one of the key benefits of Proposed Rule 1430. 5-10

Subsection "(f)(3)(C) Housekeeping Requirements" states that "compressed air cleaning operations or dry sweeping shall not be conducted within 30 feet of any metal cutting or metal grinding operation."

9

Compressed air does not clean. Compressed air is used so that the grinding operator can see if he or she has successfully smoothed the part. CMC suggest that the SCAQMD revisits this subsection and get some more information from the metal forging community on how compressed air is used at grinding stations.

Eliminating specific dry sweeping will work directly against good housekeeping measures at a metal forging facility. Based on the configuration of the grinding space, there could be spatial limitations if dry sweeping is not an option. CMC suggests eliminating the new dry sweeping requirement within 30 feet of any metal cutting or metal grinding operation.

5-10 cont

Comment #10: Grinding Regulation Will Set a Precedent for 20,000+ Facilities

SCAQMD has proposed to regulate all metal grinding. Examples of operations that conduct some form of metal grinding across the 10,750 square miles of Los Angeles County, Orange County, San Bernardino County, and Riverside County are:

- Ports
- Ship yards
- Rail yards
- Auto repair shops
- Water utilities
- Electric utilities
- Waste management facilities
- Concrete facilities
- Refineries
- Residential construction
- Office construction
- Road construction
- General construction
- Clean energy projects
- Truck repair stations
- Prisons
- Airports
- Naval yards
- Jewelry making and repair
- Artwork

Proposed Rule 1430 will set a precedent for 20,000+ facilities because:

1. SCAQMD staff states grinding is an unregulated activity that it will now regulate.
2. SCAQMD staff concludes that all grinding is a source of toxic or particulate emissions.

5-11

10

3. SCAQMD staff concludes that all types of grinders larger than 1" are a source of toxic or particulate emissions.
4. SCAQMD staff concludes that all metals (even gold and platinum) are a source of toxic or particulate emissions.
5. SCAQMD staff concludes no distinction for the duration of grinding.
6. SCAQMD staff concludes no distinction for the intensity of grinding.
7. SCAQMD staff concludes no distinction for the volume of grinding particulate created.
8. SCAQMD staff concludes no distinction for the number of grinders used at a facility.

To provide an example of how this proposed rule will set a precedent, hand grinding conducted at a metal forging facility is the same as hand grinding done at a construction site, auto repair shop, port, airport, water utility line installation, etc. Under Proposed Rule 1430, SCAQMD's precedent is for all grinding, from all sources, based on any duration, intensity, volume, or metal to: (1) All metal grinding operations must be under a total enclosure. (2) All metal grinding must be vented to an emission control system. 5-11 cont

The purpose of this comment is to emphasize the need for SCAQMD staff to provide more detailed rule language, and define why Proposed Rule 1430 is specific to metal grinding conducted at metal forging operations.

Comment #11: Conclusion

For the last 48 months, SCAQMD examined metal grinding as a potential source of hexavalent chromium generation. 45 of these 48 months (January 2013 to September 2016) concentrated on 22 metal forging facilities throughout the South Basin, with much focus on a single facility in Paramount.

The last 3 months (October 2016 to December 2016) have been significant for the SCAQMD. Expanded air monitoring efforts uncovered locations and processes prone to generating the dangerous levels of hexavalent chromium in the city of Paramount.

On November 30, 2016, the city of Paramount released a list of 88 metalworking businesses that are known in the industrial area. On December 12, 2016, SCAQMD shared that a multi-agency efforts has visited 170 facilities in the last 6 weeks. CMC expects there will be more businesses to be discovered, especially when the SCAQMD focuses on rogue operations. 5-12

Based on the expanded number of businesses currently being uncovered, new data collected by the SCAQMD, recent enforcement activities, and science of metal grinding, CMC concludes that Proposed Rule 1430 will provide the following:

a) Bringing Process Grinding Operations Indoors.

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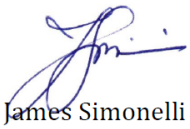
b) Permitting of Grinding Equipment.
c) Possible Reduction of Nuisance Dust and Particulates.
d) Potential Reduction of Odor Complaints.
e) Better Housekeeping.

5-12 cont

On behalf of the California Metals Coalition, thank you for the opportunity to participate in the rulemaking process for Proposed Rule 1430: *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities*. If you require any additional information, please do not hesitate to contact us directly.

CMC looks forward to the next working group meeting, receiving feedback on its enclosed comments, and finding quick, science-based solutions for communities in the South Basin.

Sincerely,



James Simonelli
Executive Director

5-1 Response: The SCAQMD staff appreciates that the California Metals Coalition supports the rulemaking for Proposed Rule 1430. The SCAQMD also concurs with the California Metals Coalition that process grinding operations conducted outdoors are not an acceptable practice for the metal working industry. Responses to the California Metals Coalition's comments are provided below.

5-2 Response: The proposed rule is not targeting a specific toxic air contaminant, but is addressing metal particulate some of which are toxic air contaminants. In Working Group Meeting #2, staff explained that based on ambient monitoring on Vermont Ave. near Carlton Forge Works, there were two metals of concern, nickel and hexavalent chromium. These metals were identified based on the levels and their toxicity. The SCAQMD staff had explained that the voluntary measures that Carlton Forge Works had implemented to reduce metal particulate emissions from their metal grinding operations showed a reduction in nickel levels, but not hexavalent chromium levels. This was an indication that the hexavalent chromium levels were likely coming from additional source(s) that could possibly come from operations other than metal grinding within the forging facility or possibly from a separate source. SCAQMD staff held a Town Hall Meeting in the city of Paramount on August 16, 2016 committing to conduct expanded monitoring of hexavalent chromium.

In October 2016, the SCAQMD staff initiated additional hexavalent chromium monitoring in the city of Paramount to identify the source(s) of hexavalent chromium. This expanded monitoring effort included three sites near Carlton Forge Works on Illinois and Somerset, Illinois and Adams, and Illinois and Jefferson. As shown in Table A-1 below, of the seven monitored values between October 15 through November 2, 2016, levels near or above 1 ng/m3 at Sites #5 and #6 indicated that additional monitoring is needed to better understand the source(s) of hexavalent chromium. Separate from monitored levels near Carlton Forge Works, monitored levels several blocks south of these monitors revealed much higher levels where SCAQMD resources were needed. However, SCAQMD staff will be conducting additional monitoring near Carlton Forge Works to better understand the source(s) of hexavalent chromium. Future amendment to Proposed Rule 1430 or other actions for facilities unrelated to metal forging may be needed, depending on results of additional monitoring.

Table A-1

Hexavalent Chromium Monitoring Date	Site #4 Illinois/ Somerset	Site #5 Illinois/ Adams	Site #6 Illinois/ Jefferson
Saturday, October 15, 2016	0.28	0.06	1.0
Tuesday, October 18, 2016	0.43	1.2	0.46
Friday, October 21, 2016	0.41	0.68	0.9
Monday, October 24, 2016	0.34	0.59	0.89
Thursday, October 27, 2016	0.21	0.28	0.98
Sunday, October 30, 2016	0.08	0.23	0.29
Wednesday, November 2, 2016	0.2	0.42	0.53
Average	**0.28**	**0.49**	**0.72**

It is appropriate to include Proposed Rule 1430 as a 1400 rule since reduction in metal particulate will reduce those metals that are toxics. Glass plate samples placed at four facilities, Carlton Forge Works, Weber Metals, Press Forge, and Schlosser Forge in 2014 near their grinding operations showed the presence of various metals, some of which are toxic such as arsenic, cadmium, and nickel to name a few shown as shown in Table A-2 below. Pollution controls to reduce metal particulate will concurrently reduce toxic metals.

Table A-2
Glass Plate Sampling at Metal Forging Facilities (2014)

	Location Description	As	Ba	Ca	Cd	Co	Cr	Cu	Fe	K	Mn	Mo	Ni	Pb	Sb	Sn	Sr	Ti	V	Zn
Carlton Forge	Roof of grinding room	6.81	418	18,500	2.12	555	607	665	35,300	6,220	430	217	3,340	89.8	7.98	33.1	181	2,320	134	1,300
	West side of roof of saw bldg	6.98	491	19,300	2.37	761	815	815	33,500	7,260	449	287	4,500	130	9.71	31.9	205	2,390	130	1,330
	East side of roof of saw bldg	7.09	521	18,000	2.43	556	661	624	26,200	6,870	391	279	3,620	94.3	9.53	31.2	215	2,470	118	1,500
	Roof of Residence across street from facility	7.63	547	21,700	1.99	258	358	746	27,100	7,690	438	149	1,750	133	10.3	42.8	185	2,290	96.8	1,270
	Top of fence along perimeter of parking lot	8.29	583	20,700	1.51	146	234	271	28,200	8,810	470	89.8	1,020	99.6	14.3	30.7	207	2,120	82.1	1,140
Weber Metals	Site #1 Roof of Bldg O	16.3	513	34,400	1.66	17.1	98.4	450	28,000	12,000	467	37.3	172	91.2	9.24	20.4	229	2,730	302	1,720
	Site #2 Open area next to tracks	17.4	2,370	35,100	1.39	17.6	160	578	71,500	12,500	637	35.5	215	98.7	6.92	21.8	272	2,720	237	1,630
	Site #4 Top of Transformer at North perimeter of facility	10.5	453	29,500	1.89	18.7	310	731	42,300	7,200	454	163	862	100	10.9	74.3	241	8,710	568	2,110
	Site #5 Roof of Bldg P	9.62	521	28,600	1.53	20.9	224	632	36,100	9,160	606	67.2	508	99.8	8.54	35.1	204	12,500	736	1,790
	Site #6 Top of Patio adjacent to Bldg L	6.98	575	31,100	2.37	13.5	86.8	654	27,700	7,060	398	23.8	151	211	87.5	89.8	184	1,850	75.8	2,080
	Site #7 Roof of storage shed at Promise Hospital	18.3	495	14,300	3.14	48.9	1,990	997	161,000	6,690	1,130	995	5,810	89.3	12.1	77.6	167	10,200	683	864
Press Forge	Site #1 Roof of outside grinding station	6.61	59.3	5,780	4.67	1,340	5,070	722	194,000	1,710	1,190	1,640	18,200	15.3	0.08	6.1	63.3	7,150	774	154
	Site #2 Roof of larger outside grinding station	8.46	38.2	3,080	6.53	791	5,140	786	197,000	1,010	1,230	2,290	18,600	14.7	0.15	7.7	51.5	7,030	919	81.1
	Site #3 Adjacent to Forge Building	12.5	333	17,200	2.4	60.1	1,170	364	116,000	4,980	835	634	4,110	55.2	5.4	85	153	9,770	794	746
	Site #4 Adjacent to 2nd Forge Building	9.65	481	20,600	2.6	36.2	224	247	39,100	8,570	532	125	757	618	9.3	503	183	2,840	136	1,170
	Site #5 North Perimeter of facility	9.73	527	20,300	3.26	31.3	181	437	32,700	7,910	473	55.1	430	414	10.3	18	179	2,510	109	1,150
	Site #6 Adjacent to Eng Building	11.2	344	19,900	2.64	34.1	711	292	79,400	5,650	707	380	2,730	81.3	6.9	62	164	6,220	440	894
	Site #7 Storage shed at Promise Hospital	13.9	430	20,400	3.66	83.2	1,260	468	105,000	7,070	838	769	4,340	70	8.6	112	184	9,510	643	769
Schlosser	Admin Bldg roof	38.4	591	25,062	3.4	329	574	641	44,791	7,607	1133	667.8	2040	106.4	12.2	31	189	1,965	85.02	1,884
	Roof of container adjacent to bldg 4	15.3	450	27,871	4.35	1797	2785	635	59,792	6,288	1170	1505.7	12434	90.78	5.33	20.2	181	2,716	142.9	1,861
	Southeast end of grinding room	20.5	444	25,233	2.65	1072	774	503	36,556	6,027	1084	527.36	7277	107.1	9.97	21.5	213	2,073	99.48	1,751
	Southeast end of grinding room adjacent to emission contr	12.2	248	14,636	4.46	8657	6983	371	27,754	3,531	546	2195.6	58462	48.88	3.81	9.37	148	2,661	149.4	1,035
	On top of modular between bldgs 2 and 3	11.2	243	19,163	3.74	4540	3742	483	34,852	3,631	599	1758.1	31059	46.04	2.3	10	124	1,988	148.3	1,477

5-3 Response: Staff has added a provision in Proposed Rule 1430 that will allow facilities that can demonstrate that if the particulate in the catch of the baghouse is 1 percent total chromium or less, that they would not be required to conduct a source test for hexavalent chromium. This demonstration would be required to be made at each changeout of the baghouse catch.

5-4 Response: Based on site visits to metal forging facilities subject to Proposed Rule 1430, metal grinding is an integral part to the metal forging operation. The SCAQMD staff does not have volume information regarding the amount of particulate that is being created as this is a newly regulated source category. Proposed Rule 1430 under paragraph (j)(1) will require that facilities submit monthly records of the weight of metal waste collected by the baghouse catch.

As you are aware, when the rulemaking began there were four facilities that were conducting grinding in the open air, with no pollution controls. The facilities that were grinding in the open air are using either hand or swing grinders. It is the SCAQMD staff's understanding that establishing requirements that prohibit open grinding and pollution controls are not inconsistent with CMC's comments stating that the "…process of grinding operations conducted outdoors are not an acceptable practice for the metalworking industry."

Proposed Rule 1430 provides variable requirements for small parts grinding and facilities with less than 10 hand or stand grinders. In addition, certain

definitions such as hand grinding excludes hand grinders with discs that are 1-inch or less in diameter.

5-5 Response: The SCAQMD staff does agree that it is unfortunate when siting decisions are made that bring sensitive land uses close to certain industrial sources. The SCAQMD does have a robust Inter Governmental Review (IGR) program to review environmental documents prepared under the California Environmental Quality Act (CEQA). Under the CEQA IGR program, SCAQMD staff reviews CEQA documents from local jurisdictions and provides recommendations on buffer zones and siting distances based on the CARB's Air Quality and Land Use Handbook, where appropriate.

5-6 Response: For requirements where a total enclosure will be constructed or the installation of pollution controls, the compliance date has been changed from 12 months from date of adoption to 6 months from the date the permit to construct is issued. This ensures that the facility is not penalized if there is a delay with issuing the permit to construct. Staff communicated with city building department representatives to ensure that the timeframe was adequate.

5-7 Response: Thank you for your comment. The SCAQMD staff agrees that there is a distinction between process metal grinding and metal grinding for repair and maintenance activities. This distinction is provided in Proposed Rule 1430.

5-8 Response: During the Working Group Meetings and at the Public Workshop and Public Consultation Meetings, there were a number of comments regarding the signage. Community representatives have requested the signs and are requesting that the SCAQMD 1800-CUT-SMOG be the first number. Proposed Rule 1430 does include a new provision that will require facilities to track confirmed odor complaints and after five confirmed odor complaints will require the facility to implement a measure to reduce odors.

Regarding comments about confirmed odor complaints, the SCAQMD will make a distinction between confirmed and unconfirmed odor complaints when discussing this issue to the public.

5-9 Response: The provision to require monthly records indicating the weight of metal processed by the facility has been removed from Proposed Rule 1430.

5-10 Response: The SCAQMD staff agrees that housekeeping is one of the key benefits of Proposed Rule 1430. Housekeeping is the third level of control, after the point source control, and total enclosure for containment of metal particulate. The SCAQMD staff agrees on the efficacy of housekeeping measures to reduce metal particulate in and around the facility and to

minimize re-entrainment of metal particulate particularly from areas where there is foot and vehicular traffic.

Regarding use of compressed air and dry sweeping, the overall objective of this provision is to minimize the opportunity for fugitive dust to become airborne. Under Proposed Rule 1430, compressed air is allowed if the compressed air cleaning operation or dry sweeping is conducted under an emission control device.

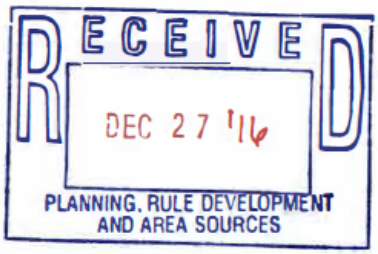
5-11 Response: SCAQMD staff has not proposed to regulate all metal grinding. Staff is looking at several options for regulating metal grinding operations. One is to establish requirements in source specific rules as those rules are adopted and amended. The second approach would be to develop a universal grinding rule that would cover a variety of metal grinding operations. Regardless of the approach, the SCAQMD staff will evaluate the sources and identify the appropriate pollution control approach. Similar to Proposed Rule 1430, the SCAQMD staff will work with a stakeholder working group to get input from the regulated industry, agencies, community and environmental groups. Proposed Rule 1430 sets a precedent for metal grinding and metal cutting operations at metal forging facilities. Many of the statements regarding why Proposed Rule 1430 will set a precedent for 20,000+ facilities is taking specific provisions in Proposed Rule 1430 out of context, which is inaccurate and misleading. For a discussion on the need for proposed rule 1430, please refer to Chapter 2.

5-12 Response: The SCAQMD staff agrees that Proposed Rule 1430 will achieve the items you identified. In addition, Proposed Rule will establish standards for point source controls, total enclosures, and housekeeping procedures. These standards will ensure that equipment and measures are properly implemented, with monitoring to ensure continued compliance. Implementation of Proposed Rule 1430 is needed to ensure that metal particulate, some of which are toxic are well controlled to ensure public health protection for the people that live, work, recreate, and educate near those facilities.

Independent Lubricant Manufacturers Association

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Independent Lubricant Manufacturers Association

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December 19, 2016

Via Electronic Mail (SNakamura@aqmd.gov)

Ms. Susan Nakamura
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

Re: Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities

Dear Ms. Nakamura:

The Independent Lubricant Manufacturers Association ("ILMA" or "Association") submits the following comments on the South Coast Air Quality Management District's ("SCAQMD") pre-rulemaking draft Proposed Rule 1430 - Control of Emissions from Grinding Operations at Metal Forging Facilities. These comments supplement the Association's December 9, 2016 letter.

Definitions

ILMA requests that SCAQMD augment its current pre-rulemaking draft Proposed Rule to reflect the following two definitions for "flood application" and "Minimum Quantity Lubricant."

Flood Application (of Metalworking Fluids for Grinding Metal Parts):

Flood application is the application of a metalworking fluid applied at the grinding wheel/work piece interface that meets all or part of the following conditions and is sufficient to suppress dust, reduce heat and spark generation at the point of cut:

1. Applying the metalworking fluid at a velocity of three (3) feet per second or greater;
2. Applying the metalworking fluid at a volume flow rate of one (1) US gallon per minute or greater; and,
3. Applying the metalworking fluid whereas the nozzle application tip pressure is ten (10) pounds per square inch gauge (PSIG) or greater.

6-1

President, Beth Ann Jones, Hangsterfer's Laboratories, Inc.
Vice President, Dave Croghan, Maxum Petroleum
Treasurer, Barbara Kudis, Allegheny Petroleum Products Company
Secretary, Chuck Decker, American Oil & Supply International LLC
Immediate Past President, Frank H Hamilton III, South Atlantic Services, Inc.
Chief Executive Officer, Holly Alfano
General Counsel, Jeffrey L. Leiter

Ms. Susan Nakamura
December 19, 2016
Page 2 of 2

Minimum Quantity Lubricant:

A Minimum Quantity Lubricant (MQL) is a lubricant, not a coolant, and does so in "minimum quantities." MQL coats the tool work piece interface with a thin film of lubricant and minimizes heat buildup through friction reduction. MQL fluids can be applied by pre-coating the tool in the MQL fluid or by direct application at the tool work piece interface with a fine mist. MQL fluids are not well suited for grinding operations since grinding processes generate significant heat at the point of cut. Thus more cooling is required than lubricity. 6-2

These definitions will ensure that forging operations utilize an appropriate volume of metalworking fluids and that those fluids are applied properly.

* * *

ILMA requests that the definitions above be included in the text of Rule 1430 as well as the modification to the applicability section outlined in the Association's December 9, 2016 letter.

Sincerely,

Holly Alfano
CEO

6-1 Response: Given the range of flood applications in the universe of facilities subject to Proposed Rule 1430 the definition of metal removal fluid is intended to be broad and not to exclude applications based on certain flow rates, etc. However, Proposed Rule 1430 has been modified to incorporate types of flood applications by excluding minimum quantity lubrication techniques from the definition of a metal removal fluid. See response #2 below for clarification on the meaning of minimum quantity lubrication.

6-2 Response: Proposed Rule 1430 has been modified to include a description for minimum quantity lubrication in the definition of metal removal fluid. This description captures the definition proposed by the commenter. Specifically, minimum quantity lubrication is described as, "techniques that coat the tool work piece interface with a thin film of lubricant and minimize heat buildup through friction reduction, further, the proposed Minimum quantity lubrication fluids are applied by pre-coating the tool in the lubricant, or by direct application at the tool work piece.

Comment Letter #7
Valley Forge Incorporated
December 29, 2016



December 29, 2016

To: SCAQMD Board of Directors
CC: Susan Nakamura (snakamura@aqmd.gov), Dan Garcia (dgarcia@aqmd.gov), Eugene Kang (ekang@aqmd.gov), Wayne Nastri (wnastri@aqmd.gov)

RE: Negative Impact of Forging Rule 1430 on a Small Business

Valley Forge, Inc. is 1 of 22 metal forging facilities that will be impacted by Proposed Rule 1430. SCAQMD visited our shop during the rulemaking process. We are a small, family-owned business with 12 employees. The jobs we provide are good-paying jobs with a middle-class wage. 7-1

Valley Forge, Inc. is an open frame, flat die forging facility in Azusa, California. It is in an industrial area and the nearest residential neighborhood is over a mile away. The only material that is ground at the facility is titanium. Titanium is a non-toxic metal. Titanium is safe enough to use in cookware, including the surface of cookware. Because of titanium's biocompatibility, it is safely used in the medical community for dental implants, false eye implants, heart pacemakers, spinal fusions, joint replacements, and more. 7-2

As currently written, Proposed Rule 1430 will put our small company out of business. For Valley Forge, the rule requires any grinding from titanium to be conducted in a total enclosure, with a new baghouse, NFPA combustion control systems, and HEPA filters. This system will cost between $250,000-$1,000,000 when including plans, engineering, permits, source testing, equipment, and maintenance. 7-3

Since titanium is non-toxic, there should be options in Proposed Rule 1430 to allow us to control potential nuisance dust without going out of business. The proposed rule as written has no distinction between toxic and non-toxic metals, size of company, location of company in relation to residential neighborhoods, volume of grinding, or options for particulate controls. 7-4

Valley Forge wants to continue operating its forging facility in Azusa. We ask that you to look at the science and provide options in the rule that match the concerns.

Sincerely,

Michael K Holmes
President, Valley Forge Inc.
444 S. Motor Ave
Azusa, CA 91702

7-1 Response: Based on staff's observations at a site visit at Valley Forge during the rulemaking process, Valley Forge was conducting it's swing grinding operation outside of a building enclosure with no air pollution controls. On January 18, 2017, SCAQMD spoke with Mr. Holmes to discuss the requirements under Proposed Rule 1430.

7-2 Response: Proposed Rule 1430 will help to reduce metal particulate, of which some are toxic air contaminants. Based on glass plate samples that were taken at other metal forging facilities that are also working with titanium, the SCAQMD found that there is the presences of metals that are toxic air contaminants such as nickel, arsenic, and cadmium. Through the abrasive nature of grinding operations, metal particulate can become airborne. As discussed in Chapter 1 of this Draft Staff Report, ambient air monitors have shown that these metal particulate emissions from grinding operations, if not well controlled, can become fugitive. Ambient monitors have also shown, that pollution controls such as baghouses with the appropriate ventilation, combined with total enclosures and housekeeping measures can reduce ambient levels of metal particulates from grinding operations.

7-3 Response: On January 18, 2017, SCAQMD staff spoke with Mr. Michael Holmes regarding the specific provisions of Proposed Rule 1430. Staff discussed the pollution controls that would be needed and the requirements for a total enclosure. Staff clarified that based on the current proposal with some revised modifications, only facilities that were within 1,000 feet of a pre-school or a school or 300 feet of a sensitive receptor would be required to have a total enclosure with negative air that is vented to air pollution controls. (Staff's proposal to extend the distance from 300 to 500 feet for sensitive receptors will not affect Valley Forge). Since Valley Forge is located well beyond these distances, their facility would need a total enclosure, but negative air vented to air pollution controls would not be required. Staff discussed that the grinding operation must be vented to pollution controls and generally discussed the housekeeping provisions and the possible need for a HEPA vacuum cleaner. It is staff's understanding that Mr. Holmes felt that he could comply with the provisions of the proposed rule. Based on staff's estimates, the estimated compliance cost would be closer to $350,000.

7-4 Response: Please refer to Response to Comment #7-2. As discussed in Response to Comment #7-2, glass plate samples have shown that facilities that are working with titanium have shown the presences of metals that are toxic air contaminants. Although titanium may be the primary element, there are a variety of other alloys in various percentages. Glass plate samples as well as ambient monitoring near Carlton Forge Works has shown the presences of other metals (Please refer to Chapter 1 of this Staff Report). Proposed Rule 1430 includes a number of options for facilities. Staff will be adding

a provision that will allow facilities to forgo hexavalent source testing if the baghouse catch at each change out is less than 1 percent. In addition, if the facility is not located near sensitive receptors or schools, negative air vented to pollution controls for the total enclosure will not be required. There are also special provisions for small part grinders and grinding of small parts.

Comment Letter #8
The Boeing Company
January 12, 2017

From: Pearce, William R <william.r.pearce@boeing.com>
Sent: Thursday, January 12, 2017 10:33 PM
To: Daniel Garcia
Subject: Proposed Rule 1430 Comments

Dan, here are general comments and questions with respect to Proposed Rule 1430. I believe the District's intent is to cover forging operations and the following comments follow along those lines. Our basic understanding is that forging is a process that results in metallurgical recrystallization and grain refinement as a result of the thermal cycle (heating metal to plastic deformation temperature) and deformation process. This results in an end product that is uniform in structure and composition. I believe this was what Mike Pearce was alluding to in the meeting. Perhaps a better way to approach the definitions is to have a definition for Metal Forging Operations and a definition for Metal Forging Facility:

- **Metal Forging Operation is the process of forming and shaping metals through the use of hammering, pressing, or rolling by heating raw stock, usually in the form of ingots, logs or billets, to its plastic deformation temperature and then shaping to a desired shape and size.**
- **Metal Forging Facility means any facility that performs metal forging operations. Metal grinding, metal cutting, and small hand grinding operations related to metal forging operations are included.**

8-1

- **With respect to (d)(3), it appears that the District is only allowing the use of total enclosures and precluding the use of other types of equipment that may be as effective in controlling emissions. One specific example are downdraft table booths fitted with HEPA or ULPA filters. However, the units only consist of three walls and a ceiling. Boeing has found these to be very effective when working on small parts. Recommend that the language in (d)(3)(B) allowing alternate methods for compliance if approved by the District also be included in (d)(3)(A).**

8-2

- **Confused about the intent of (e)(5). (d)(3) appears to require the use of a total enclosure. If the total enclosure is vented to a control device, not sure the reasoning behind requiring visual markers for activities that are within a total enclosure.**

8-3

- **With respect to (h)(1)(B), requirements should be specified as part of the source test protocol and District approval process, rather than specifically listed in this section. The information for targeted pollutants is required in (h)(4)(B), which is easily obtained through the SDSs for the raw materials. Facilities should not be required to test for materials such as hexavalent chromium if no materials containing chromium are being processed.**

8-4

- **With respect to (i)(3), appropriate pressure drops should be determined through the permitting process rather than a "one size fits all" approach. Newer filter systems can handle higher pressure drops with no degradation in efficiency due to significant improvements in construction/design of these filters. The language specified in Rule 1155 is appropriate in this case: all permitted PM control devices shall be operated and maintained in accordance with the manufacturer's operation and maintenance manual or other similar written materials supplied by the manufacturer or distributor of a control device to ensure that the control device remains in proper operating condition.**

8-5

- **With respect to Rule 219 exemptions, request that the specific exemptions of concern in Rule 219 be identified until such time as Rule 219 is revised to prevent any potential confusion. One such concern is whether the exemption for small abrasive blasting units would be eliminated as a result**

8-6

1

of the proposed rule. During the working group meeting, the answer appeared to be no, but the definition of metal grinding raises a concern even for this exemption. 8-6 cont

Please let me know if you have any questions.

Bill Pearce
The Boeing Company
310-200-3155

8-1 Response: Proposed Rule 1430 has been modified to include language from the commenter's suggested definition for both a metal forging operation and metal forging facility. Specifically, the proposed rule has been revised to define a metal forging facility to mean any facility that forms and shapes metals through the use of hammering, pressing, or rolling by heating raw stock, usually in the form of ingots, logs or billets, to its plastic deformation temperature and then shaping to a desired shape and size. Metal grinding, metal cutting, and small part grinding operations related to this process are included in this definition.

8-2 Response: Proposed Rule 1430 does not require small part grinding to occur in a total enclosure. Pursuant to paragraph (d)(1) small part grinding may occur in a temporary enclosure, building or total enclosure. The total enclosure requirements set-forth in paragraph (d)(2) of Proposed Rule 1430 (i.e., formerly paragraphs (d)(2) and (d)(3) in the Preliminary Draft Rule) are limited to metal grinding operations, excluding, small part grinding and metal cutting operations.

8-3 Response: During the rule development process the SCAQMD staff conducted site visits at most forging facilities that will be subject to Proposed Rule 1430. During these site visits SCAQMD staff observed several metal grinding operations that conducted grinding activities a significant distance from the emissions collection hood, resulting in poor emissions capture into the emissions control device and significant fugitive emissions. Therefore, paragraph (e)(5) is intended to ensure that hand grinding, stand grinding, swing grinding and torch cutting are conducted close enough to the dedicated emissions collection hood to maximize emissions collection and minimize fugitive emissions.

8-4 Response: Paragraph (h)(1) of Proposed Rule 1430 has been revised to include a provision that will allow for metal analysis by XRF to identify the level of chromium in the baghouse catch(s) of metal grinding or metal cutting operations. The revised provision is intended to provide source test relief to owner(s) or operator(s) of metal grinding or metal cutting operations that processes metals containing very low levels of chromium.

8-5 Response: Paragraph (h)(4) (i.e., formerly paragraph (i)(3) in the Preliminary Draft Rule) of Proposed Rule 1430 has been revised to allow the owner or operator of a metal forging facility an opportunity to demonstrate a different HEPA performance standard for pressure drops. The revised provision requires the owner or operator to demonstrate the performance standard during the performance test for compliance with the emission limitation for the emission control device.

8-6 Response: The SCAQMD staff has revised the definition of a metal grinding operation in paragraph (c)(17) (i.e., formerly paragraph (c)(18) of the Preliminary Draft Rule) of Proposed Rule 1430 to exclude specific types of metal grinding operations, such as, abrasive blasting and shot peening

Comment Letter #9
City of Paramount
January 19, 2017

DARYL HOFMEYER
Mayor
PEGGY LEMONS
Vice Mayor
GENE DANIELS
Councilmember
TOM HANSEN
Councilmember
DIANE J. MARTINEZ
Councilmember

City Council
(562) 220-2223

From: Office of the Executive Officer Date: 1/23/17
To: Clerk of the Boards
Cy: Wayne, Phil, Susan
For your action by: ____ For your info. ✓ handling ✓
For response for: ____ signature, cc: ____

January 19, 2017

Governing Board Members
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

SUBJECT: SUPPORT OF PROPOSED RULE 1430

Dear Governing Board Members:

This letter is in support of Proposed Rule 1430, which deals with toxic emissions, particulate matter emissions, and odors from grinding and metal cutting operations at metal forging facilities. The City of Paramount strongly urges the South Coast Air Quality Management District Governing Board to adopt Rule 1430 when it is presented in March 2017. The requirements of the proposed rule, which include the total enclosure of metal grinding and cutting operations, venting of emissions to emission control devices, cleaning of areas where grinding and cutting takes place, source testing of emission control devices, and installation of bag leakage detection systems, have proven to significantly reduce emissions. 9-1

In particular, the requirements of Rule 1430 were successfully implemented by Carlton Forge, located in the City of Paramount, to reduce emissions. Beginning in September 2013, Carlton Forge began implementing measures now contained in Rule 1430. By the spring of 2015, toxic emissions and particulate matter emissions had dropped "significantly" at Carlton Forge, according to the SCAQMD website. Given the clear correlation between the implementation of these measures and the reduction of emissions at Carlton Forge, we believe that adoption of Rule 1430 is essential to protect the health and safety of people living near forging facilities, employees of forging facilities, and, of course, children attending schools near these facilities. 9-2

While asking that you pass 1430 as quickly as possible, we would also request that SCAQMD complete health assessments and related studies to see if the rule can be even further enhanced eventually in relation to all toxic air contaminants and all emitting facilities. 9-3

16400 Colorado Avenue • Paramount, CA 90723-5012 • Ph: 562-220-2000 • Fax: 562-630-6731
facebook.com/CityofParamount | paramountcity.com | instagram.com/paramount_posts

Governing Board Members
January 19, 2016; Page Two

Again, the City of Paramount strongly urges the South Coast Air Quality Management District to adopt proposed Rule 1430 without any possible delay when it is presented.

CITY OF PARAMOUNT

PARAMOUNT CITY COUNCIL

Daryl Hofmeyer
Mayor

Peggy Lemons
Vice Mayor

Gene Daniels
Councilmember

Tom Hansen
Councilmember

Diane J. Martinez
Councilmember

9-1 Response: The SCAQMD staff appreciates the city of Paramount's support for Proposed Rule 1430. The city of Paramount has been a consistent participant at Working Group Meetings and has very cooperative in providing meeting locations throughout the rule development process so the SCAQMD staff could host Working Group Meetings and the Public Consultation Meeting in the city of Paramount. The SCAQMD staff agrees that implementation of the proposed rule will provide needed emission standards for metal grinding operations at metal forging facilities and will provide greater health protection to residents, students, and workers in the city of Paramount as well as other communities with metal forging facilities with metal grinding operations.

9-2 Response: Many of the voluntary measures that were implemented at Carlton Forge Works to reduce metal particulate emissions from metal grinding operations are incorporated in Proposed Rule 1430. Implementation measures such as point source controls, total enclosures, and increased housekeeping will reduce ambient levels of metal particulate. Monitoring near Carlton Forge Works showed a correlation between nickel levels implementation of measures at Carlton Forge Works where nickel levels declined when measures such as increased air flow, improvements to the total enclosure, and moving grinding activities closer to pollution controls.

9-3 Response: The SCAQMD staff is planning on conducting additional monitoring to better understand if there other emissions sources within the metal forging operation that may be contributing to hexavalent chromium levels. Hexavalent chromium levels are generally below 1 ng/m3, however, levels on individual days have been just above 1 ng/m3. If additional requirements are needed for metal forging operations or another industry category, the SCAQMD will take the appropriate actions to address these emissions.

Comment Letter #10
Almega Environmental
January 25, 2017

January 25, 2017

Mr. Eugene Kang
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

Subject: Proposed Rule 1430 - Comments

Dear Mr. Kang:

Almega Environmental appreciates the opportunity to submit these written comments regarding the South Coast Air Quality Management District's (SCAQMD) Proposed Rule 1430: *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities.* These comments are made based on the recent Public Workshop presentation on January 19 at the SCAQMD.

Almega Environmental is an SCAQMD LAP certified independent testing company that has provided services in the southland for over 30 years. Most recently have been involved in The SCAQMD Rule 1420.2 rulemaking and testing that was adopted in 2015.

We apologize if some of these comments have been previously addressed, as only recently have become involved in Rule 1430 and may have missed some of the discussion in the past work group meeting. Our comment are as follows:

Comment 1: No Emission Rate Criteria.

The current emission limit are based on concentration (0.01 or 0.002 grains per of particulate matter per dry standard cubic foot). Without an emission rate based on an actual mass basis or corrected for diluent air (as in the NOx corrected to 3% O2 limits) this creates an environment where the limits can be met thru diluting the exhaust air or mixing it with fresh air to bring down the concentrations to the desired level. We do not think that this is one of the desired options that the District would want to inherently be promoting by only have a concentration limit. 10-1

Almega Environmental & Technical Services, 10602 Walker Street, Cypress, CA 90630 Phone: 714-889-4000

Comment 2: No "di minimis" Criteria for Exempting Low Polluters.

The relative significance of low polluters versus high polluters does not seem to accounted for sufficiently. An 80,000 scf blower venting a building full of grinding operations would have the same limit (gr/dscf) as a single grinder being vented in a fume hood with 200 scf blower, although one could be emitting 400 times more emissions. At some point the emission rate of the smaller operation should be considered so low as to be exempt from portions of the rule.

In (e)(3) you do allow for smaller operations to comply by using only a 98% control device instead of the costlier 99.97% HEPA which would be helpful to the smaller facilities.

But we think we may be able to take it one step further. In (e)(3)(C) it is stated that the if the uncontrolled emissions are less than the screening levels in Table I of Rule 1401 (New Source Review of Toxic Air Contaminants) that the facility would only need to comply with only the 98% control criteria. We would ask why would any control device be required if they met the standard Rule 1401 screening level criteria. This could be the di minimis criteria for installing a control device.

10-2

We believe that the collection/housekeeping management of the emissions is still an important part of the rule, and without these considerations the actual emissions would be difficult to quantify.

The "di minimis" alternative may be to keep the collection/housekeeping aspect of the rule and then just perform a periodic check (every 3 years ??) to make sure the facility is still under the Rule 1401 screening levels (1:1,000,000). If they exceeded these levels, then the next stage, 98% or 99.997% controls, could be required. This would also incentivize the facilities to self-control the emissions to keep below that threshold.

Comment 3: Maintain No Efficiency Test Requirement

Currently there is no provision in the Rule to test the installed control devices for efficiency. We agree with this direction and do not want to be put into a situation where we need to show a 99.97 efficiency across a HEPA. The inlet loading of the control devices would need to in excess of 16000 mg in a Method 5 train to show a 5 mg catch weight with a resultant 99.97% efficiency. This is not practical.

10-3

Comment 4: Defined Multiple-Metals scope

Method 436 states

> "This method applies to the determination of aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), phosphorus (P), selenium (Se), silver (Ag), thallium (Tl), vanadium (Vn) and zinc (Zn) stack emissions from stationary sources." 10-4

Please confirm that the testing scope will be isolated to just these metals, or will they be subject to possible additions based on the process and materials used.

Also, we request that Mercury be excluded from the standard scope of testing unless Mercury is utilized by the process. Where all the other metals are collected in the same "fraction" of the sampling train, the Mercury aspect of the testing adds an additional absorbing solution and fraction that adds equipment, manpower and a cost burden that should not be incurred if not needed. 10-5

Thanks for your considerations,

Charles M. Figueroa
Senior Project Manager
Almega Environmental & Technical Services

Cc: Dan Garcia, SCAQMD
Susan Nakamura, SCAQMD

Almega Environmental & Technical Services, 10602 Walker Street, Cypress, CA 90630 Phone: 714-889-4000

10-1 Response: The emission standard under Proposed Rule 1430 is based on Rule 1155. The Rule 1155 emission limit of 0.01 gr/dscf was reduced to 0.002 gr/dscf based on the emission limit that was achieved by a baghouse with HEPA for a metal grinding operation.

10-2 Response: SCAQMD staff has performed multiple site visits at metal forging facilities observing multiple types of metal grinding or metal cutting being present. Metal grinding or metal cutting operations done under a continual flood of metal removal fluid were observed to have minimal emissions. As such, these operations are not included in Proposed Rule 1430. Other metal grinding or metal cutting operations can have an additive effect where smaller operations can be produce emissions equivalent to larger operations depending on the amount of grinding or cutting stations, duration of operation, or frequency of operation. These observations have made it necessary to include smaller operations to be vented to an air pollution control device. Effective control of emissions via an air pollution control device reduces metal particulates that can become fugitive.

10-3 Response: SCAQMD staff acknowledges the comment. Manufacturers of HEPA systems will certify the product to ensure that the system meets the 99.97% control. Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters allows the operation of applicable equipment without a field certification of emission as long as it has been certified by the manufacturer.

10-4 Response: CARB Method 436 allows the "extra" impinger for Mercury to be removed from the train, if there is no Mercury in the process. PR 1430 requires the submission of a source test protocol. The owner or operator of a metal forging facility may propose to not include the impinger for Mercury in the protocol. SCAQMD staff will evaluate the necessity to test for Mercury on a case by case situation.

10-5 Response: Please refer to response to comment #10-4.

Comment Letter #11
Lisa Lappin
January 19, 2017
(Email addresses are not shown to protect the privacy of email recipients)

Rule 1430_language of odors
From: Lisa Lappin [ljtutoring@gmail.com]
Sent: Thursday, January 19, 2017 12:13 AM
To: Cher Snyder; csynder@aqmd.gov; Susan Nakamura
Cc: Jane Williams [redacted]; Robina [redacted]; michele lewis [redacted];
Laurie Guillen [redacted]; Ramona Guillen [redacted];
Magdelena [redacted]; Ericka Martinez [redacted];
Jo A Arias [redacted]; Jose [redacted]; Central Thirteen [redacted];
Karina Espinosa [redacted]; Rachel Uranga [redacted];
Rebecca Plevin [redacted]; Tony Barboza

Dear Ms. Nakamura and Ms. Snyder,

This email is a follow-up to the call I made to both of you immediately following the 4th working group meeting regarding rule 1430 wherein there was some debate as to whether reducing odors should be included in the goals/objectives of rule 1430. I would like to reiterate in writing what I expressed verbally to both of you by phone the day after the workshop: community residents, homeowners in Paramount, and I strongly assert that the language of 'odor control' in the stated goals and objectives of rule 1430 remain as it was originally proposed at the outset of grinding meeting #4 in the draft by Ms. Nakamura. Although I stated at the meeting that I would prefer to see the language of odor removed from the goal/objective if fighting to keep it in opposition to protests from the Metal Lobby would cause rule 1430 to be postponed, I have since spoken with community members who are in disagreement. They are concerned that ongoing odors will not only decrease the value of their property but will more importantly continue to bother their children as they play in their yards and schools including Lincoln, Gaines (elementary and preschool), and Jackson Middle School. Concerned Paramount Resident members and members of the Paramount Community Coalition Against Toxins and myself all want to odor reduction to remain a critical component of the goal of rule 1430. 11-1

We also want to see the wording of 'odors' remain in the signage posted outside the 5 forging companies in Paramount as well as other forging companies in Southern CA. If the wording on the posted sign includes a warning to call SCAQMD regarding 'Air Quality Concerns' we would like to see this vague language explicated with specific examples such as "Report Air Quality Concerns including odors, dust, and smoke to 1 800 CUT SMOG." We do not think that the phone number of the company should be included on the signage as that could lead to confusion as to who is in charge of monitoring these concerns. We suggest that the signs be bilingual in the language that is used predominately in each community in addition to English. 11-2

According to the LA Times article written by Tony Barboza, there have been 350 calls complaining of odors in Paramount since 2011 with over 50% of them from metal companies. Last week 9 teachers from Gaines School called in complaining of an odor that was not verified so no public nuisance violation was issued. Six teachers from Lincoln School called on Friday and 3 from the same school as well as other residents last Wednesday. Something must be done to reduce this continual nuisance and injustice. That is why is it so important that rule 1430 retain this language.

11-3

Thank you for considering our concerns.

Lisa Lappin

11-1 Response: The purpose of Proposed Rule 1430 still includes reducing odors. In addition, contingency provisions have been added to require facilities to begin implementing odor reducing measures after five confirmed odor complaints that are associated with their metal grinding or cutting operations.

11-2 Response: The wording of the signage have been revised to state, "TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST, OR SMOKE FROM THIS FACILITY, CALL EITHER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG OR [*FACILITY CONTACT PHONE NUMBER*]."

11-3 Response: Please see response to comment #11-1.

Comment Letter #12
Lisa Lappin
January 19, 2017
(Email addresses are not shown to protect the privacy of email recipients)

From: **Lisa Lappin**
Date: Thursday, January 19, 2017
Subject: Proposed Changes to Rule 1430 to safeguard children
To: Susan Nakamura <snakamura@aqmd.gov>, Cher Snyder [redacted],
Joe Lyou [redacted], Robina Suwol [redacted], Jane Williams [redacted],
Cynthia Babich [redacted], Rebecca Plevin [redacted],
Rachel Uranga [redacted], "Barboza, Tony" [redacted],
michele lewis [redacted], Central Thirteen [redacted], [redacted],
[redacted], Laurie Guillen [redacted], Jose [redacted]

Dear Ms. Nakamura,

Thank you for working so hard on rule 1430 over the past years. Although the rule is strong in some regards and will help protect public health, I would like to see some revisions made that will strengthen it further for the sake of school children and residents in the low-income communities where many of these forging companies are zoned. One revision which seems critical for public health of children living near forging companies (who play in the dirt outside their homes and put it inadvertently into their mouths through touch) is that the distance of sensitive receptors be expanded from 300 ft. to 500 ft. This distance is underpinned by the CARB Land Use Planning Handbook and is necessary to protect the health of children and the elderly, the most vulnerable of our society. This is also critical to safeguard patients in hospitals whose breathing is compromised. If the distance is extended from 300 to 500 ft., four public schools that would have been excluded from the benefit of additional protective measures would be safeguarded including Lindberg Elementary, Firth Rixson, Longfellow, and Robert F. Kennedy School, zoned just 70 feet beyond the current 300 ft. regulation. 12-1

Secondly, I strongly support Robina Suwoll's proposal at rule/grinding meeting #4 that preschools, day care centers, Head Start Programs, and other educational settings for children 0-5 that are not located on public school grounds be considered in the category of schools rather than sensitive receptors with the additional footage requiring additional protective measures including negative air with Hepa filtration. It is imperative that settings for children aged 0-5 (the most vulnerable of all ages) not be omitted from the provision requiring that extra protective measures be required on forging companies grinding in their proximity. 12-2

Lastly, as an educator for 25 years and an advocate for children, I strongly propose that the distance of 1,000 ft. discussed in the paragraph above be extended to 1,500 ft. to provide additional protective measures be required on forging companies that grind within 1,500 ft. of 2 elementary schools that will be exempted from this provision as the draft is currently written. These schools include: Vernon City School which is zoned 1437 ft from Ajax Forge and Ann St. Elementary zoned 1100 ft. from CA Drop Forge. Given the environmental injustices that the children of Vernon have endured since birth as a result of Exide Battery Plant, I trust that SCAQMD, the community of Vernon, environmental activists, a sympathetic public, legislators, and even the Metal Lobby would understand the need to extend the distance from 1,000 ft. to 1,500 ft. to protect these children as well as the children at Ann St. Elementary. It seems unjust that they would be prevented this additional safeguard because of a 100 ft. additional distance. The following CA Education Code underpins the need for this extension, requiring a distance of one quarter mile between proposed schools and sites that emit toxins (1320 ft.). "The LEA shall consult with the administering agency and the local air pollution control district or air quality management district to identify facilities within a quarter mile of the proposed site that might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials, substances, or wastes and shall provide written notification of those findings." (See Education Code Section 17213(b) and Public Resources Code Section 21151.8(a)(2).) An additional 180 ft. is not an unreasonable request.

As discussed at grinding meeting #4, metal lobbyists and environmental lobbyists could easily find common ground on creating legislation that would prohibit schools and programs for children 0-5 from being zoned in the future within 1,500 ft. of companies using toxic materials including forging companies. In fact, a precedent already exists.

Thank you for your attention to these concerns. I look forward to continuing to work together to find a rule that safeguards the children of SCAQMD basin and one that will serve as an example to other regions and states.

Sincerely,

Lisa Lappin

12-3

12-1 Response: Proposed Rule 1430 has been modified to require facilities that are within 500 feet to install negative air for their total enclosure.

12-2 Response: Proposed Rule 1430 has been modified to require facilities that are within 1,000 feet of a school, pre-school, early Head Start or Head Start program to install negative air for their total enclosure.

12-3 Response: The SCAQMD staff is sensitive to schools that are in impacted areas, such as Vernon Elementary School. Extending the distance from 1,000 to 1,500 feet will have little impact on this school. The greatest reduction will be the pollution controls for the grinding stations and the total enclosure. Adding the negative air to the total enclosure will provide an additional benefit to ensure fugitive emissions are contained within the enclosure, with the benefit to receptors that are at a much closer distance than 1,000 feet. Pursuant to the CARB handbook, there are multiple references to utilizing a 1,000 feet of separation between distribution centers, rail yards, and chrome platers. ARB's 2002 Barrio Logan Study measured concentrations of hexavalent chromium in the air. Results indicated that over 90 percent risk reduction occurs within 300 feet. Less than 10 percent risk reduction is achieved beyond the 300 feet, and much less beyond 1,000 feet. CARB's recommendation for siting new sensitive land uses within 1,000 feet, is a precautionary measure. Establishing the requirement for negative air for schools, preschools, pre-head start, and head start programs that are 1,000 feet of a metal forging facility is health protective.

Response to Comment #13
Julia Clabault
December 8, 2016
(Email addresses are not shown to protect the privacy of email recipients)

From: Julia Clabault [redacted]
Sent: Thursday, December 8, 2016 5:12 PM
To: Daniel Garcia <dgarcia@aqmd.gov>; Barbra Lee [redacted]; Secretary Roriguez [redacted]
Subject: EPA Agencies Performing

Mr. Garcia,

I am including the director and the secretary of EPA in this email correspondence out of frustration of you Mr. Garcia, NOT responding to any emails that I have sent you even though you are the contact person on outbound memos concerning Paramount City pollution problems, I also would like the director and secretary to be informed and respond to this letter I am taking the time to write concerning AQMD, The Health Department, and DTSC, and working together to with city officials and community members to address enviormental concerns in a timely manner. There seems to be no accountability.

AQMD higher officials have failed to responded to emails (Derrick Alarorre, Wayne Nastri, Jason Lowe to name a few) regarding concerns about the city of Paramount resident's request for AQMD to go door to door to issue STOP WORK orders until companies can operate safely assuring the community they are no longer contributing to distributing toxic cancer causing debris (e.g. Chrome 6) We have patiently and repetitively been asking AQMD to address these concerns since 2012 when they continued to get regular high readings when doing test samples, after they had supposedly addressed Carlton Forge pollution violations.

AQMD was taken four years of taking samples and receiving the SAME data indicating a spike in Chrome 6, and have done nothing to work with city officials to pull all business licences and commence immediate door to door inspections. I called and request air sampling be completed by AQMD in 10/2016 on my property because AQMD complained they could not figure out or get permission to establish more testing stations. John Akers and Michael Pua dropped off clear plastic boxes with test plates and NEVER followed up with any results. More test plates were dropped off and never picked up (Yes. I still have the plates as proof). Cher Synder had no follow through in ensuring her staff would complete the task of picking up the plates and delivering test results.

The Health Department was never notified from AQMD of the any readings in the past years that were not in safe range, and to date still have produced not flier sent to residents homes providing information on the precautions that the community should take to limit exposure. After filing a EPA report and many more emails unanswered from Dr. Rangam, I reached Carrie Tayour, Health Department, who committed to coming to my property to take a soil sample due to my fear of the black fine dust which sparkled under sunlight that was collecting on my white patio pad could be Chrome 6 which could also be seeping into my ground water. Carrie and Michael Jordan sent announced to my house the day before Thanksgiving 11/23/16 John Ferrer, Industrial Hygeienst, and Renor Mayshack to take a scan of my soil. Both Carrie and Michael promised this was the first step and than a lab soil test would be completed. Carrie also stated in an email she would follow up with me on what the soil reading were to explain them to me. She never did follow up explaining anything nor came back to take a soil test to have a lab asset the sample. NO ONE is answering where is all the Chrome 6 going when it is not staying in the air?

This is appalling. There is NO ACCOUNTABILITY for any of these agency to be held responsible to be responding in a timely manner to address issues and fix problems. NONE of these agencies are even talking and working with one another. The Health Department should have been notified years ago when AQMD got reading about unsafe levels that the residents were being exposed too. All these big salary positions sponsored by our tax payers money and no one is working too hard, and Wayne Nastri is publicly stating in the LA TIMES "...no other agency would be moving this fast to address the issue". That horse's ass. I wish he had to live here and have his children breath what we have to breath due to his lack of action every day. Sam Atwood is stating "No immediate threat and people do not have to leave their homes". Again you come live here and try to resume normal life with your windows open or try sitting outside on your patio to read a book or conduct outdoor activities and feel safe when you have cancer causing toxic particles in the air leaving you with a soar throat daily.

13-1

We the residence of Paramount City are appalled by EPA agencies (AQMD, HEALTH DEPARTMENT, and DTSC) lack of professionalism. These agencies are not being supervised or held accountable to perform. They are not working cohesively
to identify the sources and immediately issuing STOP WORK orders until these companies can prove they are in compliance. This is profit over wealth. You would not allow a restaurant to continue to serve food that is causing illness to people, so why are you not moving to promptly and swiftly to stop the toxic out bursts and have transparency with data logs posted on the Internet of what your agencies are doing daily to inspect and limit business licenses so you are not having to high of a concentration industries in one small area ?

Paramount City is only five square miles and 50,000 people. How many metal business do you have here operating?

Most recently, ONLY two businesses here in Paramount, Anaplex Corporation and Aerocraft Heat Treating Company have been sited by AQMD in the last four years.

We were wondering when are you going to address all other possible businesses polluting our air?

Why are you NOT pulling all the licenses and inspecting other possible contributors of this poison and immediately issuing STOP WORK ORDERS NOW?

The Paramount Refinery (burning oil creates Chrome 6) why is this not being inspected?

We want the Medical Waste Company (no other city would give permit too) inspected, as well from the Health Department.

Why are these agencies not being inspected at the intervals and transparency to the public similar to businesses serving food with posted letter grades on the outside of the building indicating last date inspected and clearance codes indicated?

13-1 cont

Mr. Garcia you have not responded to emails these are the problems we see with your draft for next steps for AQMD.

You have now taken a MONTH to write a proposal for grinding operations that could have been written in a few days. SET A DATE and ENFORCE the plan NOW and REVISE as needed. We are tired of your weekly TOWN HALL MEETINGS which AQMD continues to refuse to send out mailings to homes to include all residents, so only few people even know about the meetings. We are predominantly Spanish and I had to complain to the City Manager, John Moreno that AQMD has nothing printed in Spanish. You also run meeting and provide no ones name or contact information for further questions to be addressed. That is so unprofessional and unethical as well.

13-2

HERE ARE OBJECTIONS TO PROPOSALED RULE 1430
ALL CENTERED AROUND LITTLE to NO ACCOUNTABLITY FOR AQMD TO SET REASONABLE TIME LINES AND MAINTAN A SCHEDULE OF REGULAR INSPECTIONS WITH POSTED RESULTS TO THE PUBLIC

1. No Rule Adoption Date
AQMD refuses to state an action time line for the proposal. 30 more days later we have endured yet another month of toxic exposure. AQMD proposal has compliance dates all set to 60 to 90 days with 1 year to 4 year source test emissions completed not by AQMD, but the owner. A schedule needs to be adhered to by AQMD similar to restaurant inspections where the clearance for safe operations is posted on the front of the building indicating last day inspected by AQMD and their rating (e.g. A, B. C)

13-3

2. AQMD filed a proposed order that COULD shut the companies down if no remedy is made to fix the situation. Yet AQMD needs some district administrative action that must first be considered by an independent body to have it enforced.

3. WHAT? Shut the business down NOW till they can prove to run safely. PERIOD

13-4

*No later than 12 months for the Date of the Rule Adoption operations for grinding are to be conducted in an enclosure. NOT ACCEPTABLE this is a year from now.
(A) Conducting grinding in a temporary enclosure NOT ACCEPTABLE This is not even defined what that would look like, but could be interrupted that tarps could be set up in the shape of cube would be acceptable. NO Temporary Structure should be

13-5

(6) The owner only needs to do inspections once a month. NOT ACCEPTABLE each shift should be responsible to for testing to make sure it is safe to proceed.

13-6

(7) Must fix repairs and leaks with in 72 hours NOT ACCEPTABLE If there is a leak all operations must STOP until repaired.

13-7

(8) 12 months after adoption of the RULE facilities must conduct a metal grinding test if they are within 300 ft of the sensor NOT ACCEPTABLE This should not take 365 days for this to be implemented and it should be mandatory for all businesses to conduct this test regardless of sensor location.

13-8

(e) Metal Grinding Emission Requirements
(I) No later that 1 year of Adoption of the Rule facilities shall vent emissions NOT ACCEPTABLE Business should not be able to operate until they are properly vented and clearly this should not be accepted that they have a year to comply.

13-9

(f) Housekeeping Requirements
30 days from Date of Adoption (this date is never set by AQMD) owner shall control conducting all following housekeeping procedure NOT ACCEPTABLE AQMD is NOT writing in the proposal any accountability for themselves in this proposal. We need regular follow up inspection by AQMD with transparency to the community of the findings posted outside the buildings. This is the only way to have checks and balances in place to ensure businesses are operating safety and that AQMD is doing their jobs.

We also need to see what are the consequences and fines for any violations. That is not in the proposal to even ensure accountability.

13-10

Maintenance and Repair Activity Requirements

30 days from Adoption of Rule NOT ACCEPTABLE STOP ALL WORK UNTIL BUSINESSES CAN OPERATE SAFETLY!!!!!!!!!!!!!!!!

(1) (A) Source test for PM emissions once every 12 months NOT ACCEPTABLE This should be done bi-weekly.
(B) Source test for hexavalent chromium and multiple metal emissions tested every 48 months NOT ACCEPTABLE That is every 4 years you are testing for this. That is crazy! Again this should be bi-monthly.

13-11

(2) 0-90 day for pre-test protocols for source tests provided to Executive Officer (Who is this Executive Officer?)NOT ACCEPTABLE Time lines to comply are months away when they should be at best a few weeks away.

13-12

(10 Tests must be completed by SCAQMD laboratory Approval Program unless excused by the Executive Officer to have testing done at another lab. NOT ACCEPTABLE
There is no established set time frame for when the tests will be completed, or where the data will be posted for public review, and their should be only one point person that is handling testing and that should be AQMD.

13-13

(13) 60 days or 2 months to submit testing reports NOT ACCEPTABLE time line. It should not take 2 months to complete the report. 13-7 cont

Monitoring

(4) Periodic smoke test shall be conducted, unless this presents an unreasonable risk to safety every 3 months NOT ACCEPTABLE AQMD is not even stating what is considered "unreasonable risk" so they are unable to hold anyone accountable for not conducting the smoke test because unreasonable risk would be subject to interruption. 13-14

(F) Log of reports regarding odor, date and time of occurrence, name of person filing the complaint, and how it was resolved should be kept. NOT ACCEPTABLE
Who is keeping the log the owner? Come on where is AQMD to step in and establish accountability for logging occurrences and have transparency to the public of their inspections? 13-15

(K) Sinage
1 800 CUT SMOG
NOT ACCEPTABLE We want AQMD to take some responsibility in having regular inspections completed with posted results on the outside of the building just like the ones that restaurants have indicating the facilities are clean and when they were last checked. 13-16

Permit Application
60 Days from Rule Adoption
NOT ACCEPTABLE AQMD can make some more money collecting permit application fees. We the citizens of Paramount want AQMD to be more active in personally doing inspections and posting results on the outside of the building last day inspected and rating for how clean the facilities are. AQMD has too many bloated big salary people on tax payers pay role and this agency is not performing. 13-17

Please give me the email address to Gina McCarthy from EPA. I am having a hard time locating her contact information.

Paramount residents want the report made public from DTSC that was projected to take 2 years for them to complete and promised done by Oct 2016 which was suppose to give an update on contaminant (e.g. LEAD) that they had discovered.
We want the Health Department to provide notice to schools and the community of health precautions to take to limit the exposure of hexavalent chrome. We want AQMD to do door to door inspections and issue stop work orders until they can operate safety.

Julia Clabault

13-1 Response: Thank you for your concerns about the city of Paramount. In previous emails to you, staff has informed you about our Expanded Monitoring Efforts for Hexavalent Chromium in the city of Paramount. The SCAQMD has been working with various agencies to investigate facilities and address the high levels of hexavalent chromium found in late October. The SCAQMD updates information on the investigation, monitoring data, enforcement actions, information for an informational weekly call for the public that you can obtain from our website at: http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities

13-2 Response: Developing a new rule or regulation takes time to study the affected sources, pollution controls, and develop a proposal. The SCAQMD staff works with a stakeholder group that includes representatives from the community, environmental groups, affected industries, and agencies. Through the rule making process, the SCAQMD staff will visit affected facilities to understand their existing operations. Sources regulated under Proposed Rule 1430 are currently unregulated and so the SCAQMD had

very little information about the affected facilities when the rulemaking process began.

Regarding providing information for the Expanding Monitoring Efforts for Hexavalent Chromium in the city of Paramount, much of the material distributed at the town hall meetings was translated in Spanish. In addition, there has been a Spanish translator at all off the town hall meetings and on the weekly informational call to update the public on the Expanded Monitoring Efforts.

13-3 Response: Proposed Rule 1430 is scheduled for a public hearing on March 3, 2017. Upon rule adoption, affected facilities must meet specific provisions and compliance deadlines. Beginning date of rule adoption outdoor at metal forging facilities and certain housekeeping measures must be implemented. Numerous compliance deadlines for additional requirements follow these initial requirements. For details on additional requirements and compliance deadlines refer to Proposed Rule 1430 dated February 1, 2017.

13-4 Response: ~~The SCAQMD currently lacks the authority to shut a facility down, however, in t~~The signed Stipulated Order for Abatement for both Aerocraft and Anaplex, there are provisions in which each facility is required to curtail their chrome emitting operations if the SCAQMD's monitor is greater than 1 ng/m3 averaged over the most three recent valid monitoring results. Please visit SCAQMD's website on Paramount Ongoing Air Monitoring Activities at: http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities

13-5 Response: Facilities need sufficient time to construct a total enclosure, if they are currently not conducting metal grinding operations within an existing building. The proposed rule defines "temporary enclosure" to be structure comprised of a floor, roof, walls, and or partitions on at least three sides or three quarters of the perimeter that surrounds areas where metal grinding or metal cutting operations are conducted.

13-6 Response: These inspections are for the building enclosure. These will be physical structures that deterioration should be minimal, if any. Proposed Rule 1430 requires that monthly inspections be conducted to ensure that the structure is free of cracks, breaks, etc. Monthly inspection ensures that these enclosures are well maintained and is proactive to ensure that if there is an issue it can be fixed before it becomes a larger issue.

13-7 Response: Thank you for your comment. Staff added the following language in Proposed Rule 1430:

The owner or operator of a metal forging facility shall immediately stop metal grinding and metal cutting operations if inspection of a total enclosure where these operations are conducted reveals a break, crack, gap or deterioration which results in fugitive metal dust. The owner or operator may resume metal grinding and metal cutting operations until the total enclosure is repaired pursuant to paragraph (d)(7), or if temporary measures are implemented that ensure no fugitive metal dust results from the break, crack, gap or point of deterioration.

13-8 Response: It appears that the ~~commentor~~commenter is concerned that the facility has 12 months to build a total enclosure with negative air. 12 months is an aggressive schedule. It takes time for the facility to complete their engineering and design, submit permits, begin demolition and construction, then installation of the pollution controls for the total enclosure with negative air.

13-9 Response: Please refer to Response to Comment #13-8. Most facilities do have their emissions vented to a baghouse. However, Proposed Rule 1430 will require that the baghouse meets specific emission standards as well that it is designed with the proper air flow to ensure that the emissions are being appropriately collected.

13-10 Response: We use that language as a place holder for when the rule is adopted. We are working towards an adoption date of March 3, 2017.

13-11 Response: A source test is an extensive testing procedure to quantify the emissions from the stack. The cost per stack can be $5,000 per test for PM and $7,500 per test for multi-metals or for a hexavalent chromium source test. It is not reasonable to require this type of testing weekly or bi-monthly.

The proposed rule does require a series of parametric monitoring requirements such as a bag house leak detection system, measure the pressure across the HEPA filter, and conducting a smoke test. All of these monitoring techniques provide additional information on the performance of the air pollution control device and ensures proper operation.

13-12 Response: The term "Executive Officer" to refer to SCAQMD staff. The pre-test protocol is to be submitted as the affected facility gets closer to installation of the permitted pollution control equipment.

13-13 Response: This provision requires that the operator use a test laboratory to analyze the source test results that is approved under the SCAQMD Laboratory Approval program. The tests which are referenced are the source tests under paragraph (h)(1). Compliance dates for initial source tests are specified in subdivision (h).

13-14 Response: Appendix 1 of Proposed Rule 1430 sets-forth clear procedures for the smoke test requirements in subdivision (i). For example, section 3.1 of Appendix 1 requires that the owner or operator evaluate any potential physical hazards to ensure that the smoke test is conducted in a safe manner.

13-15 Response: Proposed Rule 1430 establishes specific recordkeeping requirements for odor contingency measures and monitoring requirements. At any given time, these records are subject to inspection by the executive officer to determine compliance with the proposed rule. These records are in addition to records maintained by the District for other applicable SCAQMD rules, such as, Rule 402-Nuisance.

13-16 Response: SCAQMD staff is proposing that metal forging facilities subject to Proposed Rule 1430 comply with specific signage requirements. Please refer to subdivision (k) of the proposed rule for these signage requirements.

13-17 Response: Proposed Rule 1430 provides a brief window of time to allow existing forging facilities with metal grinding or metal cutting operations an opportunity to implement a compliance strategy (i.e., determine appropriate air pollution controls) for the proposed rule. For example, during this time a facility would determine the adequate controls needed to comply with the rule requirements and submit all necessary permit applications. Although this brief window of time is provided for facilities to submit permit necessary permit applications it is important to emphasize that the proposed rule will immediately prohibit outdoor metal grinding and metal cutting.

Response to Comment #14
Sierra Alloys
January 27, 2017

SIERRA ALLOYS
TSI TITANIUM
PRV Metals Companies

5467 Ayon Ave Irwindale Ca 91706

Ms. Susan Nakamura
Acting Deputy Executive Director
SCAQMD
21865 Copley Dr.
Diamond Bar, Ca 91765

January 27, 2017

Re.: **Revised approach to compliance with Rule 1430**

Based on the analysis of the bag house dust collected by SCAQMD, which shows little to no detectable traces of toxic particulate and the bullets listed below, Sierra Alloys would like to propose a revised approach to compliance with proposed rule 1430.

- **Review of Analysis**
  - Levels of Toxic elements are non-detectable or very, very low
  - Aluminum: OSHA set a legal limit of 15 mg/m3 (total dust) and 5 mg/m3 (respirable fraction) aluminum in dusts averaged over an 8 hour work day
    - Sierra Alloys proposes to run a study to determine the levels of total dust
  - Titanium: Titanium is non-toxic

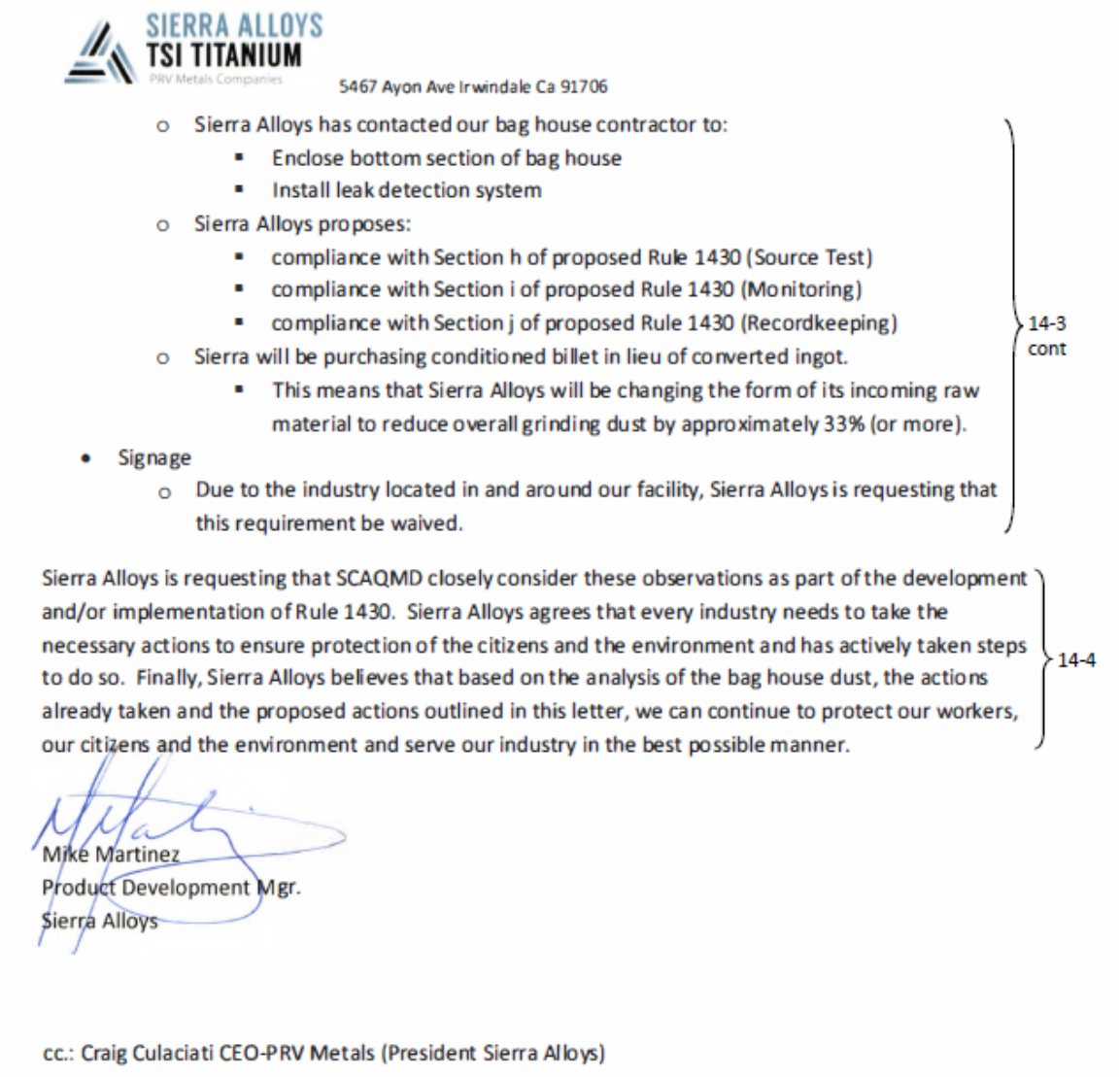
  } 14-1

- **Additional Observations**
  - Sierra Alloys participates in Storm Water Monitoring and has never been sited or identified as a source of high levels of pollutants or toxic materials run-off. Further, one of the locations where storm water has to be collected is in the grinding area.
  - Sierra Alloys is located in a heavily industrialized area where the closest Sensitive Receptor is greater than 1000 feet away (closer to ½ mile)
  - Sierra Alloys Alloys is surrounded by other industries that potentially generate significant toxic emissions. These are:
    - Davis Wire
    - Matheson Gas
    - Veolia Chemical Treatment Facility
    - Miller Brewing Company
    - Waste Management
    - Burtec
    - Several Auto Body Shops
  - Sierra Alloys forges titanium products which has been established is non-toxic to humans. As a matter of fact, at least 2 of the alloys processed by Sierra Alloys are used in knee and hip replacements for humans. These are T6Al4V and T6Al4VELI.
  - Nickel bar forged at Sierra Alloys is never ground due to the starting stock.

  } 14-2

- **Additional Actions To be Taken by Sierra Alloys Alloys**
  - Wet sweeper has been purchased and is in use 2 times per day
    - Sierra Alloys will begin logging these activities.

  } 14-3



SIERRA ALLOYS
TSI TITANIUM
PRV Metals Companies

5467 Ayon Ave Irwindale Ca 91706

- Sierra Alloys has contacted our bag house contractor to:
  - Enclose bottom section of bag house
  - Install leak detection system
- Sierra Alloys proposes:
  - compliance with Section h of proposed Rule 1430 (Source Test)
  - compliance with Section i of proposed Rule 1430 (Monitoring)
  - compliance with Section j of proposed Rule 1430 (Recordkeeping)
- Sierra will be purchasing conditioned billet in lieu of converted ingot.
  - This means that Sierra Alloys will be changing the form of its incoming raw material to reduce overall grinding dust by approximately 33% (or more).

14-3 cont

- Signage
  - Due to the industry located in and around our facility, Sierra Alloys is requesting that this requirement be waived.

Sierra Alloys is requesting that SCAQMD closely consider these observations as part of the development and/or implementation of Rule 1430. Sierra Alloys agrees that every industry needs to take the necessary actions to ensure protection of the citizens and the environment and has actively taken steps to do so. Finally, Sierra Alloys believes that based on the analysis of the bag house dust, the actions already taken and the proposed actions outlined in this letter, we can continue to protect our workers, our citizens and the environment and serve our industry in the best possible manner.

14-4

Mike Martinez
Product Development Mgr.
Sierra Alloys

cc.: Craig Culaciati CEO-PRV Metals (President Sierra Alloys)

14-1 Response: The commenter stated that based on baghouse dust collected and analyzed by SCAQMD staff the levels of toxic elements are non-detectable or very low, however, the lab analysis results of dust collected from the baghouse catch demonstrate nickel levels at nearly 17 times above the limit of detection. Nickel is considered a toxic metal. Also, based on glass plate samples taken at other metal forging facility's that process titanium SCAQMD found the presence of metals that are toxic air contaminants such as nickel, arsenic and cadmium.

The OSHA limits mentioned by the commenter are the Permissible Exposure Limits established by OSHA, however, these limits pertain to worker exposure levels intended to achieve worker safety objectives that are distinct from the purpose of PR 1430.

14-2 Response: SCAQMD staff is aware that Sierra Alloys is in a heavily industrialized area and that the closest sensitive receptor is over 1,000 feet from the facility. Proposed Rule 1430 is designed with point source requirements specific to the type of metal grinding operation(s) at the facility and enclosure requirements based on the proximity of the facility to a sensitive receptor(s) (e.g. residences and schools). Since Sierra Alloys is located over 1,000 feet away from the nearest sensitive receptor the facility is not required by PR 1430 to install a total enclosure with negative air that is vented to air pollution controls.

SCAQMD staff recognizes that facilities located near PR 1430 affected facilities are also potential emissions sources. In-fact all six of the nearby facilities identified by the commenter have SCAQMD permits. Regarding comments pertaining to titanium and nickel alloys processed by Sierra Alloys please see response 14-1 above.

14-3 Response: SCAQMD staff is encouraged by the actions implemented by the facility toward compliance with PR 1430. SCAQMD staff emphasized at a meeting held with the facility on February 1, 2017 that it is important to review all provisions of the proposed rule to ensure compliance upon rule adoption.

Regarding signage, the signage requirements in PR 1430 were added based on input that SCAQMD staff received at multiple public meetings. For additional information related to the signage requirements see responses 3-11, 5-8, 11-12, 13-16, PWS-3, and PC-6.

14-4 Response: An analysis conducted by SCAMQD staff of baghouse catch samples taken from the swing grinding operation at Sierra Alloys demonstrated the presence of Nickel that is a known toxic air contaminant. For additional details about the results from this analysis see Response 13-1 above. The results of the analysis combined with substantial information gathered from metal grinding and cutting operations at metal forging facilities by SCAQMD staff support the need for actions beyond those outlined in the commenter's letter, including, Proposed Rule 1430.

Response to Comment #15
Associates Environmental
January 27, 2017

From: Ricardo Flores <rflores@associatesenvironmental.com>
Sent: Wednesday, February 8, 2017 6:05 PM
To: Daniel Garcia
Subject: PR 1430

Hi Dan

I have the following questions related to PR 1430 dated February 1, 2017.

1) PR1430(n) – The proposed rule will require that existing grinding equipment and associated controls seek a permit. The SCAQMD has recognized that existing equipment is exempt from permitting. Since the equipment will loose its exemption, will it be subject to Rule 212, Regulation XIII (NSR), Rule 1401 and Rule 1401.1. Also, will this equipment be required to be submitted within 60 days of rule adoption. } 15-1
2) Definition of Maintenance & Repair: Could this be extended to general maintenance activities. I have someone who has a torch cutter that is used for maintenance activities and not to cut parts for production. I think this equipment should be excluded from the control requirements of the rule. } 15-2
3) Requesting an exemption for Torch cutting used for maintenance activities and not for cutting ingots. } 15-3
4) PR1430(d)(2) – Can you add language that a facility could petition to the EO for additional time if there are some unforeseen delays in the modification/construction of the total enclosure. } 15-4
5) PR1430(d)(8) – Does "the property line of the facility" include properties owned by the facility which are adjacent (or across the street) to the main manufacturing facility. } 15-5
6) PR1430(g)(2) – Who determines when wind speeds hit 20 mph? } 15-6
7) PR1430(h)(1)(C) – Would the District consider the average of all samples collected within a 48 month period to satisfy this requirement. If one sample shows a chromium value greater than 1%, is the facility stuck to testing every 48 months or could they still sample in the future and analyze for chromium to demonstrate its results are less than 1%. } 15-7
8) PR1430(i)(1) – Rule 1155 does provide a rule exemption, except to R1155(d)(1), to dust collectors equipped with HEPA filtration. } 15-8
9) PR1430(i)(3)(D) - Is the averaging period on a rolling 4 hour average or 4 hour blocks? } 15-9
10) PR1430(k) – Does each entrance mean all entry points. A facility may have a main office that has foot traffic. The facility may have multiple driveways around the perimeter of the facility. Also a facility may have adjacent buildings where no grinding or metal cutting occurs. Could you please clarify where signage would be required. } 15-10
11) The District has not provided an exemption for low use grinding equipment. It's difficult to accept that a grinder that is used infrequently needs to meet the same requirements as grinders that are being used daily. The cost doesn't make sense. Maybe there is a compromise that could be reached. } 15-11

If you have any questions please let me know.

Thanks

Ricardo Flores
Associates Environmental

15-1 Response: The proposed rule sets forth requirements for metal grinding equipment at forging facilities, as a result, this equipment will become subject to SCAQMD permitting requirements. Equipment that is addressed by

Proposed Rule 1430 will be subject to Rule 212. However, this equipment will be exempt from Rule 1401 and Rule 1401.1 based on subparagraphs (g)(1)(D) and (i)(1)(F) of these rules respectively. Further, facilities that comply with subdivision (l) of Proposed Rule 1430 will not be required to undergo certain New Source Review requirements under Regulation XIII and 1401, provided permits for existing equipment are submitted within the timeframe specified in the rule.

15-2 Response: Metal grinding and metal cutting equipment that is used for maintenance activities and not to grind or cut parts for production is not subject to Proposed Rule 1430. The applicability of Proposed Rule 1430 has been modified to clearly states, "this rule does not apply to metal grinding or metal cutting that is… conducted to maintain or repair equipment."

15-3 Response: See response to 14-2 above.

14-4 Response: The compliance dates for total enclosures required by Proposed Rule 1430 are based on SCAQMD staff discussions with local planning officials in jurisdictions where forging facilities subject to the proposed rule reside. Based on these discussions SCAQMD staff was informed that review and approval of building plans would require between 10-30 days. Thus, SCAQMD staff determined that for existing buildings [six months after date of rule adoption] and for new buildings [twelve months after date of adoption] would provide adequate time to complete a total enclosure.

15-5 Response The property line of the facility means the property line of a metal forging facility as defined by paragraph (c)(17) and does not extend to offsite facilities that do not meet the definition of a metal forging facility.

15-6 Response Wind speed would be determined by a wind speed measuring device, for example, an anemometer that is used by the owner or operator or the Executive Officer.

15-7 Response At the request of stakeholders, SCAQMD staff added the allowance for an X-ray fluorescence analysis of total chromium to Proposed Rule 1430. The purpose for this provision was to provide facility's an opportunity to demonstrate low or no hexavalent chromium emissions from metals processed in their grinding operation. Changing the averaging time for this provision to all samples collected within a 48 month period could yield higher hexavalent chromium emissions during certain time periods. This would be contrary to the intent of the added provision.

Proposed Rule 1430 will require a hexavalent chromium source test within 60 days of an X-ray fluorescence analysis for a baghouse catch sample that demonstrates greater than 1% by weight of total chromium. The facility

may resume conducting X-ray fluorescence analyses for the baghouse catch post source testing, but, will be required to conduct a source test within 60 days of any result that demonstrates a baghouse catch sample with greater than 1% of total chromium by weight.

15-8 Response Baghouses or dust collectors that require HEPA filtration are not exempt from the BLDS requirements of Proposed Rule 1430. In Chapter 2, *subdivision (i)* of the Proposed Rule 1430 Staff Report the SCAQMD staff has clarified that the requirements for the BLDS are broader than those found in SCAQMD Rule 1155, because all baghouses will be required to have a BLDS.

15-9 Response The 4-hour average pressure readings required by subparagraph (i)(3)(D) for HEPA pressure monitoring are on a rolling 4-hour average. SCAQMD staff has updated the staff report to include this clarification.

15-10 Response Use of the term "entrance" in the signage provisions of subdivision (k) of Proposed Rule 1430 refers to the main entrance of the facility. SCAQMD has updated the proposed rule to state main entrance and provided additional clarification in Chapter 2 of this report.

15-11 Response During the rule development process community members requested that Proposed Rule 1430 avoid the inclusion of exemptions due to significant concerns about fugitive metal particulates from metal grinding operations. Therefore, Proposed Rule 1430 does not provide any exemptions for metal grinding activities, however, the requirements of the proposed rule are tailored to specific grinding activities by category, including, type of grinding equipment and proximity to sensitive receptors. For example, the rule provides for an alternative 98% control efficiency for 0.3 micron particles if certain criteria are met.

Based on information collected during the rule development process staff determined that the frequency of grinding activities is not necessarily indicative of low emissions. For example, although billet grinders and swing grinders may not be used as frequently as hand grinders at some facilities the intensity of these type of grinding activities can result in elevated emissions levels of metal particulates.

Response to Comment #16
Atlas Carpet Mills
January 12, 2017

From: Robert Komrij [mailto:rkomrij@atlascarpetmills.com]
Sent: Thursday, January 12, 2017 7:15 AM
To: Sam Wang <swang1@aqmd.gov>
Subject: RULE 1430

Greetings Mr. Swang

With the proposed
Metal Grinding Operations requirements be applicable at manufacturing facilities?
Occasionally we weld, cut and grind metal in our maintenance departments.
Will these proposed restrictions apply to these type of operations?
Or do the proposed restrictions apply to ONLY Metal Forging Facilities. } 16-1

Thanks
Robert Komrij / Atlas Carpet Mills / (323)724-9000 X2264

This message is intended solely for the use of the addressee(s) and is intended to be privileged and confidential. If you have received this message in error, please immediately notify the sender and delete all copies of this email message along with all attachments. Thank you.

16-1 Response: Proposed Rule 1430 only applies to metal grinding and metal cutting operations at metal forging facilities. The provisions of this rule do not extend to metal grinding and metal cutting operations at non-forging facilities.

Response to Comment #17
ILMA
January 27, 2017

Independent Lubricant Manufacturers Association

400 North Columbus Street, Suite 201
Alexandria, VA 22314
p 703.684.5574
f 703.836.8503
www.ilma.org
ilma@ilma.org

February 10, 2017

Via E-Mail (SNakamura@aqmd.gov) and FedEx Delivery

Ms. Susan Nakamura
Acting Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182

Re: Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities

Dear Ms. Nakamura:

The Independent Lubricant Manufacturers Association (ILMA) supports the South Coast Air Quality Management District's (SCAQMD) adoption of Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities as set forth in the February 1, 2017 draft rule language.

This letter supplements ILMA's December 9, 2016 and December 19, 2016 written submissions, as well as the oral statements made by ILMA representatives during the public workshops and working group meetings on the proposed rule. 17-1

ILMA appreciates this opportunity to comment on and support Proposed Rule 1430.

Sincerely,

Holly Alfano
Chief Executive Director

President, Beth Ann Jones, Hangsterfer's Laboratories, Inc.
Vice President, Dave Croghan, Maxum Petroleum
Treasurer, Barbara Kudis, Allegheny Petroleum Products Company
Secretary, Chuck Decker, American Oil & Supply International LLC
Immediate Past President, Frank H Hamilton III, South Atlantic Services, Inc.
Chief Executive Officer, Holly Alfano
General Counsel, Jeffrey L. Leiter

17-1 Response: Thank you for your comment. Please refer to responses 2-1 through 2-3 and 6-1 through 6-2 for SCAQMD staff's response to comments submitted by ILMA during the rulemaking process for Proposed Rule 1430.

Response to Comment #18
Boeing
February 2, 2017

From: Pearce, William R [mailto:william.r.pearce@boeing.com]
Sent: Thursday, February 2, 2017 9:11 AM
To: Daniel Garcia <dgarcia@aqmd.gov>
Subject: SCAQMD PROPOSED RULE 1430

With respect to the monitoring, question the need under (i)((3)(B) for calibration twice a year. The requirement is captured under (i)(3)(A) as to calibrations performed per manufacturer's specifications, which usually includes the frequency of calibration. Recommend that (3)(B) be modified as follows: 18-1

(B) Is calibrated according to manufacturer's specifications. At a minimum, calibration will performed on an annual basis.

18-1 Response: Thank you for your comment. Proposed Rule 1430 has been modified to include the suggested revision.

Valley Forge Talking Points

Questions

1. Have there been studies on the toxicity of Ti emissions? 19-1
    a. What are the results?
    b. What size of operations were studied?
    c. Are the results (if any) public
    d. What volume was identified in the findings?
2. Why are Ti grinding lumped in with other toxic metallic emission profiles? 19-2
    a. The findings state also include companies that grind multiple metals
    b. Ti is typically defined as non toxic
3. Are there any assurances that the permits will be processed in a reasonable amount of time – without having to expedite the permit applications – without additional fees. 19-3

Permitting

1. How will staff deal with city permitting requirements that are greater than SCAQMD permitting and installing requirements? 19-4
2. Could NOVs be issued due to external permitting requirements?
3. Has staff made provisions for extending permitting requirements?

House Keeping

1. All the fines are swept up and collected on a daily basis 19-5
2. Operators all wear inhale protection (face masks)
3. Due to minimum collection of particulates the masks will last a week prior to disposal
4. Area is kept swept clean.
5. Housekeeping is ongoing at VF

Operation

1. 2 grinders use swing grinders approximately 5.5 hr/day 19-6

2. Each grinder grinds 5 bars per day
3. Material loss due to grinding is 8-12 pounds per bar.
    a. The collection of fines directly correlates to metal reduction on the bars.
    b. The grinding is very course – not fine finish grinding – large particulate fines
4. The fines are combined with oily gloves and rags and sent to a disposal facility
5. There have been no complaints from the public to the District for the duration of the facility
6. VF is 5,300 feet from the nearest school
7. VF is in an industrial area only. No residential neighbors for about 5,000 ft
8. Major facilities adjacent – Waste Management land fill and service yard, Richold Chemical and Miller Coors Brewery – all generate odors.

19-6 cont

Recommendations:

1. Recognize the differences in large facilities and small facilities with minimal emissions profile
    a. Provide quantitative analysis of differences so Board Members have solid data to provide positive or negative votes on the rule.
    b. A bad rule pushed through without a complete analysis of all effective facilities is not a good rule.
2. Provide for alternative collection scenarios for Ti grinding vs. steel, SS and other ferrous metals with potential for hex chrome emissions.
3. Provide delayed compliance time for small emitters
4. No signage for minor sources

19-7

Other Issues

1. VF – no odor or visible emission complaints from public since the company was founded over 50 years ago.
2. VF is no violation of other 400 series rules
3. Staff estimated the cost of compliance to be about $350,000, source testing $7,500. Yet there is no assessment of actual risk relating to this facility. Thus, a true cost

19-8

effectiveness cannot be established without a determination of the cost benefit relationship of the rule.

4. What comparative analysis has been done to compare the toxicity of Ti vs. nickel, hex chrome, etc. and the correlated risk of large vs. small facilities?
5. Has there been any consideration for di mininus emission from specific applications?
6. For small facilities, consider an extended compliance date to assure proper cost effectiveness vs. emission reduction considerations are fully accounted for.
7. What has staff done to define the health risk from small emitters that grind only Ti?

19-9

on Motor and Irwindale Ave. not to mention we are directly across the street from a waste management facility and the nearest school is over a mile away.

The other issue we would be running into would be with all the permits we will need, I spoke to the contractor and he said L.A. County permitting Dept. is backed up and in some instances has taken up to 24 months to issue a permit, and under PR1430 we do not have that much time. This situation is really going to jeopardize our livelihood.

19-10

Let me know what else you need,

Thank You Tony.

19-1 Response: Please see responses 7-2 and 14-1 above.

19-2 Response: Please see responses 7-2 and 14-1 above.

19-3 Response: Please see response 4-9 above.

19-4 Response: Please see response 5-6 above.

19-5 Response: Please see responses 3-4 and 5-10 above.

19-6 Response: SCAQMD staff is concerned that based on information provided in this comment the facility's metal grinding operation generates up to 120 pounds per day of metal particulate. Further, based on material safety data sheets provided by the facility there is up to 0.8% of nickel by weight in the metals processed in the metal grinding operation. The generation of these metal particulates have the potential to result in toxic and non-toxic air emissions that require proper containment and collection. Proposed Rule 1430 is designed to address these emissions from metal grinding operations at metal forging facilities.

SCAQMD staff recognizes that some metal forging facilities are not located near a sensitive receptor (e.g., residence or school). As a result, Proposed Rule 1430 is designed with point source requirements specific to the type of metal grinding operation(s) at the facility and the enclosure requirements are based on the proximity of the facility to the nearest sensitive receptor (e.g. residence and school). Since Valley Forge is located over 1,000 feet away from the nearest sensitive receptor the facility is not required by Proposed Rule 1430 to install a total enclosure with negative air that is vented to air pollution controls.

SCAQMD staff is aware that facilities located near Valley Forge may be potential emissions sources. In-fact the nearby facilities identified by the commenter have SCAQMD permits.

19-7 Response: SCAQMD staff does not believe that is appropriate to set forth requirements for metal grinding based on the size of a metal forging facility. Based on site visits conducted by SCAQMD staff the intensity and type of grinding activity are correlated to emissions and not facility size. For example, some small metal forging facilities conduct swing grinding, which is a very intense metal grinding activity. Therefore, the requirements of the proposed rule are tailored to specific types of grinding activities, including, type of grinding equipment and proximity to sensitive receptors. For example, the rule provides for an alternative 98% control efficiency for 0.3 micron particles if certain criteria are met and requires that any facility within 1,000 feet of a sensitive receptor vent the total enclosure to negative air.

Regarding collection, it does not make sense to have alternative collection for different metal alloys based on the information gathered by SCAQMD staff during the rulemaking process. For example, your facility submitted information that states the metal grinding operation is limited to titanium alloys, however, the material safety and data sheet provided for this alloy demonstrates a presence of nickel 0.8% nickel by weight. This information does not support the need for alternative collection nor does it justify the need for delayed compliance timelines.

Regarding signage requirements, please see responses 3-11, 5-8, 11-12, 13-16, PWS-3, and PC-6.

19-8 Response: This estimated compliance cost for the facility is elevated due to current lack of air pollution controls on the facility's metal grinding operation and the need to construct an enclosure and installation of air pollution control equipment, and purchase of proper housekeeping requirements. Proposed Rule 1430 will help contain and control the estimated 120 pounds per day

of metal particulate that can be generated by the facility's metal grinding operation (i.e., based on comment 19-6).

19-9 Response: Please see responses 5-2 above.

19-10 Response: Based on discussion with building officials in the City of Azusa, where Valley Forge is located, SCAQMD staff was informed on December 14, 2016 that the review and approval for building permit(s) requires between 10-12 days. Therefore, subdivision (d) of Proposed Rule 1430 provides sufficient time to meet the total enclosure compliance dates.

From: Daniel Garcia
Sent: Friday, February 24, 2017 10:09 AM
To: Angela Kim
Subject: FW: EPA comment on SCAQMD Draft Rule 1430

Importance: High

From: Steckel, Andrew [mailto:Steckel.Andrew@epa.gov]
Sent: Friday, February 24, 2017 8:32 AM
To: Tracy Goss <TGoss@aqmd.gov>; Sutkus, Carol@ARB <carol.sutkus@arb.ca.gov>
Cc: Zimpfer, Amy <Zimpfer.Amy@epa.gov>; Vineyard, Christine <Vineyard.Christine@epa.gov>
Subject: EPA comment on SCAQMD Draft Rule 1430

EPA	**United States Environmental Protection Agency** **Region IX** **75 Hawthorne Street** **San Francisco, CA 94105-3901**

February 24, 2017

Transmittal of EPA Rule Review Comments

To:	Tracy Goss, South Coast Air Quality Management District tgoss@aqmd.gov Carol Sutkus, California Air Resources Board csutkus@arb.ca.gov
From:	Andrew Steckel, Rulemaking Office Chief steckel.andrew@epa.gov
Re:	SCAQMD Rule 1430; Control of Emissions from Grinding Operations at Metal Forging Facilities, draft dated February 1, 2017

We are providing comments based on our preliminary review of the draft rule identified above. Please direct any questions about our comments to me at (415) 947-4115 or to Christine Vineyard at (415) 947-4125.

1. Consistent with national policy regarding director discretion, please revise paragraph (d)(2) to require EPA as well as District approval of alternative methods, or specify/reference a procedure that the Executive Officer will use to determine that an alternative method is equivalent. 20-1

2. To improve enforceability, please revise paragraph (e)(4) to require that the date of version of the referenced industrial ventilation manual will be included in the facility permit. 20-2

3. For clarify, please define "wet cleaning" used in section (f) and elsewhere. 20-3

4. We believe the Smoke Generator Model listed in Appendix 1 is no longer available from the manufacturer. Please revise as appropriate. 20-4

1

20-1 Response: SCAQMD staff has revised Proposed Rule 1430 to include language in paragraph (d)(2) that references the procedure that the Executive Officer will use to determine that an alternative method is equivalent. Specifically, SCAQMD staff revised paragraph (d)(2) to include the following, "Alternative methods to minimize the release of fugitive metal dust from the total enclosure may be used if the owner or operator can demonstrate to

the Executive Officer (an) equivalent or more effective method(s) to minimize cross-draft conditions." This is consistent with language found in SCAQMD Rule 1420.2 adopted October 2, 2015.

20-2 Response: SCAQMD staff has revised the staff report to clarify that the date of the referenced industrial ventilation manual will be included in the facility permit.

20-3 Response: SCAQMD staff has revised the staff report to clarify examples of wet cleaning that are allowed, such as wet mopping and wet scrubbing conducted in a manner that does not generate fugitive metal dust.

20-4 Response: SCAQMD staff has revised Appendix 1 of Proposed Rule 1430 to reflect an example of a smoke generator model that is currently available.

Comments Received at the January 19, 2017 Public Workshop

The following comments were received at the Public Workshop for Proposed Rule 1430 on January 19, 2017.

PWS-1 Comment: Was there a change in the requirement if the source test demonstrated less than 1% total chromium?

PWS-1 Response: Based on input from stakeholders during Working Group #5 on January 11, 2017, SCAQMD staff modified PR 1430 to only require source tests of hexavalent chromium if the bag house catch was less than 1 percent [is it 1 % or less] as demonstrated at each change out when the facility removes or disposes of the materials in the baghouse catch.

PWS-2 Comment: How often would a source test occur?

PWS-2 Response: The frequency of the source test would depend on the pollutant. In general, for PM, the source test is annually, for multi-metals the source test is once every four years, and if the total chromium is greater than 1 percent from the baghouse catch, source testing for hexavalent chromium is once every four years. Subdivision (h) of the proposed rule provides more details and criteria for less and more frequent source testing.'

PWS-3 Comment: Regarding the signage requirement, the SCAQMD phone number should be listed before the facility contact. It is unnecessary to have the phone contact number of the facility as they are aware of activity occurring at the facility.

PWS-3 Response: SCAQMD staff has modified rule language requiring that SCAQMD contact information to be listed first.

PWS-4 Comment: One revision which seems critical for public health of children living near forging companies (who play in the dirt outside their homes and put it inadvertently into their mouths through touch) is that the distance of sensitive receptors be expanded from 300 feet to 500 feet. This distance is underpinned by the CARB Land Use Planning Handbook and is necessary to protect the health of children and the elderly, the most vulnerable of our society. This is also critical to safeguard patients in hospitals whose breathing is compromised. If the distance is extended from 300 to 500 feet, four public schools that would have been excluded from the benefit of additional protective measures would be safeguarded including Lindberg Elementary, Firth Rixson, Longfellow, and Robert F. Kennedy School, zoned just 70 feet beyond the current 300 feet regulation.

PWS-4 Response: Proposed Rule 1430 has been modified to extend the distance from sensitive receptors from 300 to 500 feet, such that facilities within 500 feet from a sensitive receptor will be required to have total enclosure with negative air vented to pollution controls.

PWS-5 Comment: Regarding the provision for requiring negative air for total enclosures, preschools, day care centers, Head Start Programs, and other educational settings for children 0-5 that are not located on public school grounds should be included in the category of schools rather than sensitive receptors. It is imperative that settings for children aged 0-5 (the most vulnerable of all ages) not be omitted from the most health protective provision that requires negative air for total enclosures.

PWS-5 Response: Proposed Rule 1430 has modified to require negative air for facilities within 1,000 feet of a school or and early head start schools (birth to 3 years old), head start schools (3 to 5 years old), and preschools (3-4 years old)

PWS-6 Comment: As an educator for 25 years and an advocate for children, I strongly propose that the distance of from schools be extended from 1,000 feet to 1,500 feet to provide additional protective measures. Extending the distance to 1,5000 feet will provide additional protection for two elementary schools. These schools include: Vernon City School which is zoned 1437 feet from Ajax Forge and Ann St. Elementary zoned 1100 feet from California Drop Forge. Given the environmental injustices that the children of Vernon have endured since birth as a result of Exide Battery Plant, I trust that SCAQMD, the community of Vernon, environmental activists, a sympathetic public, legislators, and even the Metal Lobby would understand the need to extend the distance from 1,000 feet to 1,500 feet to protect these children as well as the children at Ann St. Elementary. It seems unjust that they would be prevented this additional safeguard because of a 100 feet additional distance. The following CA Education Code underpins the need for this extension, requiring a distance of one quarter mile between proposed schools and sites that emit toxins (1320 ft.). "The LEA shall consult with the administering agency and the local air pollution control district or air quality management district to identify facilities within a quarter mile of the proposed site that might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials, substances, or wastes and shall provide written notification of those findings." See Education Code Section 17213(b) and Public Resources Code Section 21151.8(a)(2).) An additional 180 ft. is not an unreasonable request.

PWS-6 Response: The SCAQMD staff is sensitive to schools that are in impacted areas, such as Vernon Elementary School. Extending the distance from 1,000 to 1,500 feet will have little impact on this school. The greatest reduction will be from the pollution controls for the grinding stations and the total enclosure. Adding the negative air to the total enclosure will provide an additional benefit to ensure fugitive emissions are contained within the enclosure, with the benefit to receptors that are at a much closer distance than 1,000 feet. Pursuant to the CARB handbook, there are multiple references to utilizing a 1,000 feet of separation between distribution centers, rail yards, and chrome platers. ARB's 2002 Barrio Logan Study measured

concentrations of hexavalent chromium in the air. Results indicated that over 90 percent risk reduction occurs within 300 feet. Less than 10 percent risk reduction is achieved beyond the 300 feet, and much less beyond 1,000 feet. CARB's recommendation for siting new sensitive land uses within 1,000 feet, is a precautionary measure. Establishing the requirement for negative air for schools, preschools, pre-head start, and head start programs that are 1,000 feet of a metal forging facility is health protective.

PWS-7 Comment: We do want to express our concern with what the view of the rule will be in terms to hexavalent chromium, the science we have conveyed to the District, the science of metal grinding, the data you have collected at the air emission sources demonstrate that metal grinding is not producing the dangerous levels of hexavalent chromium. We are concerned that those who are impacted by this are going to believe that this rule will resolve this problem, we would like the District to be clear at both the workshops, townhall meetings, board meetings, in your staff notes, specifically what that is going forward.

PWS-7 Response: Please refer to response to comment #5-2.

PWS-8 Comment: There should be a separation of toxic and non-toxic metals. Previously the discussion of the rule was focused on toxic metals and then 60 days later it includes both. We believe that the agency should look at the health risk of toxics. Other agencies have a separation of the two, including this one [SCAQMD]. There should be two separate solutions.

PWS-8 Response: Please refer to response to comment #5-2.

PWS-9 Comment: Previously it was understood that small hand grinding was based on where you were grinding, but now it is based on the size of the part. The definition should be changed to small part grinding since you aren't talking about surface area.

PWS-9 Response: The reference to "small hand grinding" has been changed to "small part grinding."

PWS-10 Comment: Is the District pursuing odors? We are open to discussing odors, but each week something new is coming up and we want to catch up to what your concerns are.

PWS-10 Response: The proposed rule will address odors. Requiring total enclosures are intended to reduce fugitive metal particulate emissions from metal grinding operations, but are expected to also reduce odors. Staff has added contingency odor measures, in the event there are confirmed odor complaints. The purpose of this provision is to ensure the facility is being responsive to confirmed odor complaints and implementing measures that can minimize off-site odor issues.

PWS-11 Comment: What section in the 2005 CARB advisory report are you referring to establish the 1000 feet standard? There are many distance listed and looking for clarity for each one was used. The rule is talking about every single metal used and we want to know how all those metals are connected to your reference.

PWS-11 Response: The 1,000 feet reference is from Table 1-1, Recommendations on Siting New Sensitive Land Uses Such as Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities in CARB's Air Quality and Land Use Handbook.

PWS-12 Comment: When will the economic assessment be available?

PWS-12 Response: The Draft Socioeconomic Impact Assessment for Proposed Rule 1430 will be available 30 days before the Public Hearing.

PWS-13 Comment: There is a broad range of the monthly revenue for these facilities. For some facilities, the maintenance costs are threatening these facilities.

PWS-13 Response: The SCAQMD staff understands that the cost of compliance for some facilities is financially difficult. Facilities that are grinding in the open air with no pollution controls will have higher costs as they will need to build and enclosure, and install pollution controls. Staff has incorporated mechanisms that would allow a facility to do less frequent source testing.

PWS-14 Comment: Metal grinding occurs in over 20,000 facilities that impacts many different industries. We are asking the definitions to be tighten.

PWS-14 Response: Please refer to response to comment #5-11.

PWS-15 Comment: Facilities that aren't doing swing/billet grinding at their facilities are still being included in the rule.'

PWS-15 Response: Please refer to response to comment 5-4.

PWS-16 Comment: Why has there not been an emission rate limit for PM or chromium?

PWS-16 Response: Proposed Rule 1430 does establish a PM emission limit of 0.002 grains per dry standard cubic feet. The basis of this emission limit is source tests from two metal forging facilities with metal grinding operations.

At this point, the SCAQMD staff does not have enough information to establish an emission limit for hexavalent chromium or any other toxic air contaminant. A key consideration in establishing an emission limit for is what emission limits have been achieved in practice for similar sources. Since metal grinding is currently an unregulated source and there are very few sources that have SCAQMD permits and only one facility has a source test for hexavalent chromium. The source test showed very low levels of hexavalent chromium, and in some stacks at this facility the levels were below the detection limit. The SCAQMD staff needs more information from the affected facilities to establish an emission limit, if one were

needed. It should be noted that the proposed rule only requires facilities with a baghouse catch greater than 1 percent total chromium to conduct a hexavalent chromium source test.

PWS-17 Comment: The point source requirement should have a deminimus limit based on a pounds per hour for each facility. A small facility and large facility may be emitting different amounts, but would still be meeting the emission limit that is based on concentration.

PWS-17 Response: Please refer to Response to Comment #5-4. Regardless of the size of the facility, the SCAQMD has established an emission standard of 0.002 pounds per dry standard feet. The pollution controls will be sized according to the intensity of grinding operation to meet the emission standard. For example, a facility with a smaller, less intense grinding operation would require a smaller baghouse and smaller blower than a larger more intense grinding operation.

Comments Received at the January 25, 2017 Public Consultation Meeting

The following comments were received at the Public Consultation Meeting for Proposed Rule 1430 on January 25, 2017.

PC-1 Comment: Proposed Rule 1430 requirements are being implemented at Carlton Forge Works, but odors are still persistent.

PC-1 Response: Within the last month there has been an increase in the number of confirmed odor complaints at Carlton Forge Works. At this point, there is not sufficient information to understand if there were any changes at Carlton Forge Works that caused this increase in odor complaints.

Proposed Rule 1430 has been modified to require implementation of additional measures to reduce odors from the metal grinding operation if a facility receives more than 5 confirmed odor complaints. For the purpose of this proposed rule, confirmed odor complaints must be associated with the metal grinding operation. In addition, SCAQMD Rule 402 prohibits a facility from discharging contaminants into the atmosphere that causes a nuisance to a significant amount of individuals. Additional requirements may be imposed through implementation of Rule 402.

PC-2 Comment: Proposed Rule 1430 is the first step in regulating metal working facilities and SCAQMD staff should look beyond metal forging facilities.

PC-2 Response: SCAQMD staff is in the process of developing and amending existing rules that regulate toxic metal emissions from various sources. For 2017 there are several proposed rulemakings for Proposed Rule 1420 for lead sources, Proposed Amended Rule 1407 for metal melting, Proposed Rule 1407.1 for metal foundries, Proposed Rule 1435 for metal heat treating, Proposed Amended Rule 1426 for metal finishing (for non-hexavalent chromium source), and Proposed Rule 1469 for hexavalent chromium metal finishing operations.

PC-3 Comment: The requirement to have a total enclosure with negative air are for facilities located within 300 feet of a sensitive receptor, or within 1,000 feet of a school is not sufficient. The distance should be expanded to 500 feet of a sensitive receptor, or within 2,000 feet of a school. This would be health protective and capture an additional metal forging facility that is more than 1,000 feet of a school, but less 2,000 feet.

PC-3 Response: Please refer to PWS-6.

PC-4 Comment: How will the wastewater generated from the semi-annual cleaning of the roof be handled?

PC-4 Response: The SCAQMD has required facilities to perform roof cleanings in previous rules such as Rule 1420.2 – Emission Standards for Lead from Metal Melting Facilities on a semi-annual basis. Facilities regulated under Rule

1420.2 have installed water collection systems to capture wastewater. Metal forging facilities regulated under Proposed Rule 1430 may implement similar measures. Wastewater generated at the facility would need to be discharged and handled pursuant to the wastewater discharge permit by the respective agency.

PC-5 Comment: Proposed Rule 1430 should establish fence-line monitoring. This would tell SCAQMD the location of other issues that may be present at the facility. Monitors should be placed where the risk is the greatest such as facilities with violation or have high amounts of metals being used.

PC-5 Response: Proposed Rule 1430 does not require fenceline monitoring. The proposed rule does have a series of tools to ensure that the pollution controls required under the proposed rule are working properly such as periodic source testing, installation of bag house leak detection systems, installation of continuous data acquisition systems to monitor pressure drops of increases in the HEPA filtration, and periodic smoke tests to ensure air is moving towards the pollution controls and is not being impacted by cross-drafts within the total enclosure. All of these mechanisms will ensure continued compliance.

PC-6 Comment: Regarding the signage requirement, the language on the sign should be expanded to state to include odors, dust, or smoke, and not just odors.

PC-6 Response: Staff has modified the language to state, "to report air quality issues such as odors, dust, or smoke…"

PC-7 Comment: On the sign, the SCAQMD phone number should be before the facility contact.

PC-7 Response: The proposed rule modified the signage requirement to have the SCAQMD contact information before the facility contact information.

ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Socioeconomic Assessment for Proposed Rule 1430 – Control of Emissions from Grinding Operations at Metal Forging Facilities

March 2017

Executive Officer
Wayne Nastri

Deputy Executive Officer
Planning, Rule Development & Area Sources
Philip M. Fine, Ph.D.

Acting Assistant Deputy Executive Officer
Planning, Rule Development & Area Sources
Susan Nakamura

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Reviewed By: Elaine Shen, Ph.D., Program Supervisor
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Daphne Hsu, Senior Deputy District Counsel
William Wong, Principal Deputy District Counsel

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Chairman: DR. WILLIAM A. BURKE
Speaker of the Assembly Appointee

Vice Chairman: BEN BENOIT
Mayor Pro Tem, Wildomar
Cities of Riverside County

MEMBERS:

MARION ASHLEY
Supervisor, Fifth District
County of Riverside

JOE BUSCAINO
Councilmember, 15th District
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Cities of Los Angeles County/Eastern Region

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DWIGHT ROBINSON
Councilmember, Lake Forest
Cities of Orange County

JANICE RUTHERFORD
Supervisor, Second District
County of San Bernardino

EXECUTIVE OFFICER:

WAYNE NASTRI

EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the impacts of Proposed Rule (PR) 1430—Control of Emissions from Grinding Operations at Metal Forging Facilities. A summary of the analysis and findings are presented below.

Elements of the Proposed Rule	The purpose of PR 1430 is to protect public health by minimizing public exposure to emissions of metal particulate, some of which are toxic air contaminants (TACs) from metal grinding and metal cutting operations at forging facilities. PR 1430 would also help reduce odors. PR 1430 would ensure metal particulate emissions are appropriately vented to pollution control equipment, fugitive emissions are contained within a building enclosure, and housekeeping measures are implemented to further minimize fugitive metal particulate emissions from being re-circulated in the ambient air.
Affected Facilities and Industries	PR 1430 would affect 22 metal forging facilities, which are all classified as being in the fabricated metal manufacturing sector (NAICS 332). Fourteen of the 22 affected facilities are located in Los Angeles County, four in Orange County, and the remaining four in San Bernardino County.
Major Assumptions and Limitation of Analysis	The main requirements of PR 1430 that have major cost impacts would include the installation of baghouses and HEPA filters (point-source controls on existing and new enclosures) and the upgrading of an existing building to a total enclosure or construction of a new total enclosure. Some facilities will be required to add negative air vented to pollution controls to the total enclosure, depending on a facility's proximity to certain sensitive land uses. SCAQMD staff assumed facilities that do not have a modern baghouse would be required to, at a minimum, install a cartridge type baghouse fitted with Polyester (PE) bags. Staff also assumed that facilities that do not meet certain requirements would be required to install HEPA filtration. Further, staff assumed that most facilities would not have adequate ventilation to meet the minimum hood induced capture velocity requirements. Based on these assumptions, SCAQMD staff determined that 17 of the affected facilities subject to the rule would need to install a new baghouse with adequate ventilation to meet the minimum hood induced capture velocity requirements. In addition to a new baghouse, SCAQMD staff assumed that 13 of the 17 facilities that would need to install a new baghouse would also require installation of HEPA filtration. Also, SCAQMD staff assumed that each baghouse required by PR 1430 would need to be properly maintained with replacement PE filter bags biennially and that each HEPA filtration unit would require new filters annually.

	Additionally, staff assumed that each emission collection system would need to conduct periodic smoke tests to ensure adequate capture velocity For the 15 facilities which will need to construct a total enclosure, SCAQMD staff assumes it would cost $118[1] per square foot to construct a total enclosure based on the size of each facility's grinding operation. To further protect nearby sensitive receptors, schools, or preschools, PR 1430 would require 10 facilities to install a total enclosure with negative air. SCAQMD staff assumed that each facility required to install a total enclosure with negative air would need to purchase an anemometer to ensure compliance with the continuous in-draft velocity requirements of the total enclosure at > 200 feet per minute (fpm).
Annualized Compliance Costs	The main requirements of PR 1430 that have cost impacts for affected facilities would include total enclosures, point source emissions controls, source testing, and housekeeping measures. The average annual compliance costs due to PR 1430 is estimated to be $6.0 to $6.2 million depending on the real interest rate assumed (1 to 4 percent). Under the primary scenario, eleven facilities in the non-ferrous forging industry (NAICS 332112), a subset of fabricated metal manufacturing (NAICS 332) would bear the largest share of compliance costs (74% or approximately $4.5 million annually based on a four percent real interest rate in the primary scenario) due to the cost of installing and maintaining baghouses.
Regional Job Impacts	PR 1430 is expected to result in approximately 46 jobs forgone annually between 2017 and 2035 when a 4-percent real interest rate is assumed (approximately 44 jobs with a 1-percent real interest rate). The projected job impacts represent about 0.001 percent of the total employment in the four-county region. The manufacturing sector (NAICS 31-33), which is projected to bear all estimated total compliance costs would have an average of 15 jobs forgone per year. The sector of professional and technical services (NAICS 541) is projected to gain about 8 jobs on an annual average from additional demand for equipment installation and maintenance, expenditures made by the affected facilities to conduct source tests and ambient monitoring analysis as well as filing compliance plans. The remainder of the projected reduction in forecasted jobs would occur across all major sectors of the economy.
Competitiveness	It is projected that the manufacturing sector, where all affected facilities belong, would experience a rise in its relative cost of production by 0.003 percent and a rise in its delivered price by 0.001 percent in 2025 from the implementation of PR 1430.

[1] Based on 2016 Bureau of Labor Statistics Cost for New Industrial Building Construction, https://www.bls.gov/ppi/ppinaics236211.htm

INTRODUCTION

Proposed Rule (PR) 1430 is designed to reduce metal particulate emissions, some of which are toxic air contaminants (TACs) from metal grinding and metal cutting operations at forging facilities. PR 1430 will also help reduce odors from metal grinding and metal cutting operations. Both metal grinding and cutting operations are currently exempt from SCAQMD permits and are currently an unregulated source category. Although some of the metal grinding operations have air pollution controls, most do not. Depending on the metal alloys used in forging operations, some metal particulates can be TACs and pose a potential health risk to the surrounding community if emissions are not controlled.

To minimize the public's exposure to potential TAC emissions from metal grinding and metal cutting operations at metal forging facilities, PR 1430 would require metal particulate emissions to be vented to pollution control equipment, fugitive emissions to be contained within a building enclosure, and housekeeping measures to be implemented.

LEGISLATIVE MANDATES

The socioeconomic assessments at the SCAQMD have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the proposed rule include the SCAQMD Governing Board resolutions and sections of the California Health & Safety Code (H&SC).

SCAQMD Governing Board Resolutions

On March 17, 1989 the SCAQMD Governing Board adopted a resolution that calls for an economic analysis of regulatory impacts that includes the following elements:

- Affected industries;
- Range of control costs;
- Cost effectiveness; and
- Public health benefits

On October 14, 1994, the Board passed a resolution directing staff to address the cost effectiveness of rules and amendments and the timing of their proposal. The intent was to bring forth those rules that are cost effective first as defined in the AQMP.

Health & Safety Code Requirements

The state legislature adopted legislation that reinforces and amplifies the Governing Board resolutions for socioeconomic assessments. H&SC Sections 40440.8(a) and (b), which became effective on January 1, 1991, require that a socioeconomic analysis be prepared for any proposed rule or rule amendment that "will significantly affect air quality or emissions limitations."

Specifically, the scope of the analysis should include:

- Type of affected industries;
- Impact on employment and the economy under SCAQMD jurisdiction
- Range of probable costs, including those to industries;
- Emission reduction potential;
- Necessity of adopting, amending or repealing the rule in order to attain state and federal ambient air quality standards; and the
- Availability and cost effectiveness of alternatives to the rule

Additionally, the SCAQMD is required to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. H&SC Section 40728.5, which became effective on January 1, 1992, requires the SCAQMD to:

- Examine the type of industries affected, including small businesses; and
- Consider socioeconomic impacts in rule adoption

Finally, H&SC Section 40920.6, which became effective on January 1, 1996, requires that incremental cost effectiveness be assessed for a proposed rule or amendment that imposes Best Available Retrofit Control Technology or "all feasible measures" requirements relating to ozone, carbon monoxide (CO), oxides of sulfur (SOx), oxides of nitrogen (NOx), and their precursors. This statute does not apply to PR 1430; moreover, cost effectiveness in terms of dollars per ton is not meaningful for risk-based regulations, since many other factors besides the amount of pollution affect the risk such as the toxic potency of the contaminant and the location of receptors.

AFFECTED INDUSTRY/FACILITIES

Industry Profile

Metal forging is a manufacturing process where metal is pressed, pounded, or squeezed under great pressure into high strength parts known as forgings. The process is normally performed hot by preheating the metal to a desired temperature before it is worked. While any metal can be forged, some of the most common metals include carbon steel, alloy steel, stainless steel, very hard tool steels, aluminum, titanium, brass, copper, cobalt, nickel, and molybdenum. These metals are found in billets or ingots that are delivered to the respective forging company. The forging industry is composed of plants that: make parts to order for customers (custom forgings), make parts for their own company's internal use (captive forgings), or make standard parts for resale (catalog forgings). Metal forging creates parts that vary in size, shape, and sophistication. Some of the largest customer markets include: aerospace, national defense, automotive, oil industry, agriculture, construction, and general industrial equipment. Employment growth in this sector is driven by the needs of manufacturing facilities, as well as the construction, repair, and maintenance of infrastructure like bridges, buildings, and roadways.

About 3,400 fabricated metal manufacturing[2] establishments (NAICS 332) are located in the four-county region of Los Angeles, Orange, Riverside, and San Bernardino Counties.[3] Currently, the sector supplies about 80,000 jobs to the regional economy which has more over 7 million payroll jobs.[4] Average annual pay in the four-county region for workers in the fabricated metal manufacturing sector is about $54,000, which is four percent below the average pay of about $56,000 in the region.[5]

Affected Facilities

PR 1430 would affect 22 metal forging facilities. Fourteen of the 22 affected facilities are located in Los Angeles County, four in Orange County, and the remaining four in San Bernardino County.

All potentially affected industries are in the fabricated metal manufacturing sector (NAICS 332). Table 2 lists the type of manufacturing at affected facilities, and for each type, the facilities' industry classification, and the number of such facilities. A detailed discussion of the assumptions and basis for the number of facilities that could potentially require additional pollution controls can be found in the Staff Report for the proposed rule.

Table 2: Affected Facilities that Potentially Could Need Additional Monitoring and Controls to Comply with PR 1430

Type of Facility	Industry Classification (6-Digit NAICS Code)	Estimated Number of Facilities
Scrap Metal Forgers	Non-Ferrous Forging (332112)	11
Iron and Steel Forgers	Iron and Steel Forging (332111)	8
Heat-Treated Metal Manufacturers	Metal Heat Treating (332811)	1
Steel Mills	Fabricated Structural Metal Manufacturing (332312)	1
Industrial Fasteners Manufacturing	Bolt, Nut, Screw, Rivet, and Washer Manufacturing (332722)	1
Total		**22**

[2] Metal forging facilities are included in the fabricated metal manufacturing sector. The 6-digit NAICS level has limited employment and wage data.
[3] California Employment Development Department (EDD). QCEW Census of Employment and Wages for the 1st Quarter of 2016.
[4] Op cid.
[5] Op cid.

Small Businesses

The SCAQMD defines a "small business" in Rule 102 for purposes of fees as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. The SCAQMD also defines "small business" for the purpose of qualifying for access to services from the SCAQMD's Small Business Assistance Office (SBAO) as a business with an annual receipt of $5 million or less, or with 100 or fewer employees. In addition to the SCAQMD's definition of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 and the federal Small Business Administration (SBA) also provide definitions of a small business.

The CAAA classifies a business as a "small business stationary source" if it: (1) employs 100 or fewer employees, (2) does not emit more than 10 tons per year of either VOC or NOx, and (3) is a small business as defined by SBA. The SBA definitions of small businesses vary by six-digit North American Industrial Classification System (NAICS) codes. In general terms, a small business must have no more than 500 employees for most manufacturing industries, and no more than $7 million in average annual receipts for most nonmanufacturing industries.[6] A business in the industry of fabricated metal manufacturing (NAICS 332) with fewer than 750 to 1,500 employees is considered a small business by SBA.

Information on employees and sales for 19 out of 22 facilities is available, based on 2016 data from Dun and Bradstreet. None of the 19 facilities for which there is sales and employment data were reported as a small business as defined under Rule 102. Under CAAA definition, 13 facilities are considered small businesses and under SBA's definition, all 19 facilities are considered small businesses.

COST ASSUMPTIONS

The main requirements of PR 1430 that have cost impacts for affected facilities would include total enclosures, point source emissions controls, source testing, and housekeeping measures. Probable compliance costs of the proposed rule were developed based on a combination of data supplied by stakeholders from the metal forging industry and included industry representatives, facility operators, equipment manufacturers and vendors. Additionally, SCAQMD staff reviewed each facility's operating permits, performed on-site surveys and conducted phone interviews to determine the type of additional equipment (e.g., high efficiency bags for enhanced emissions control equipment, sweepers for housekeeping, etc.) and services needed to comply with the proposed rule. SCAQMD staff used this permit data and survey information to understand the type and frequency of housekeeping activities currently implemented by each facility subject to the proposed rule and to determine additional housekeeping activities to be implemented by each to comply with the requirements of PR 1430.

[6] See the SBA website (http://www.sba.gov/community/blogs/community-blogs/small-business-matters/what-small-business-what-you-need-know-and-wh).The latest SBA definition of small businesses by industry can be found at http://www.sba.gov/content/table-small-business-size-standards.

The costs presented in this assessment primarily cover both the capital cost and maintenance cost of emissions control equipment, for example, the use of polytetrafluoroethylene (PTFE) baghouse bags and sweepers for housekeeping. However, the costs do not include uncertainties or unexpected construction costs (e.g., variations in final quantities of PTFE bags needed, additional engineering cost, and/or contract administration). The costs presented in this assessment are intended to represent typical to high costs for equipment, maintenance activities and administrative review. All estimated costs have been adjusted to reflect 2015 dollar values.

COMPLIANCE COSTS

The main requirements of PR 1430 that have cost impacts for affected facilities would include total enclosures, point source emissions controls, housekeeping, and source tests. The annual compliance costs due to PR 1430 are estimated to range from $6.0 million to $6.2 million, depending on the real interest rate assumed (1%-4%).[7] Table 3 presents average annual compliance cost of PR 1430 by requirement categories.

[7] In 1987, SCAQMD staff began to calculate cost-effectiveness of control measures and rules using the Discounted Cash Flow method with a discount rate of 4 percent. Although not formally documented, the discount rate is based on the 1987 real interest rate on 10-year Treasury Notes and Bonds, which was 3.8 percent. The maturity of 10 years was chosen because a typical control equipment life is 10 years; however, a longer equipment life would not have corresponded to a much higher rate-- the 1987 real interest rate on 30-year Treasury Notes and Bonds was 4.4 percent. Since 1987, the 4 percent discount rate has been used by SCAQMD staff for all cost-effectiveness calculations, including BACT analysis, for the purpose of consistency. The incremental cost reported in this assessment was thus annualized using a real interest rate of four percent as the discount rate. As a sensitivity test, a real interest rate of one percent will also be used, which is closer to the prevailing real interest rate.

Table 3: Annual Compliance Costs of PAR 1430 by Category (2015 Dollars)

Category	Total Cost	Annualized Cost at 4% Real Interest Rate	Annualized Cost at 1% Real Interest Rate
Point Source Control-Baghouse*	$7,872,558	$970,615	$831,200
Point Source Control-HEPA*	$715,593	$88,226	$75,553
Total Enclosure**	$1,390,187	$102,292	$77,037
Cost of Total Enclosure with Negative Air*	$627,034	$104,917	$89,847
Total Enclosure with Negative Air Anemometer*	$8,985	$1,107	$948
Housekeeping Equipment – Vacuum***	$62,244	$11,873	$10,740
PM Emissions Source Test (Every Year)	$165,000	$165,000	$165,000
Hexavalent Chromium (CrVI) and Multi-Metals Emissions Source Test (Every 4 Years)	$495,000	$123,750	$123,750
Smoke Test (4 Times a Year)	$2,096	$8,383	$8,383
Baghouse Maintenance (Every 2 Years)	$1,567,410	$783,705	$783,705
HEPA Maintenance (Every Year)	$840,910	$840,910	$840.910
Housekeeping Roof Cleaning (Twice a Year)	$31,250	$68,345	$68,345
Annual Electricity	$2,902,854	$2,902,854	$2,902,854
Total		**$6,171,980**	**$5,978,276**

*Cost is annualized over 10 years of expected equipment life
**Cost is annualized over 20 years of expected equipment life
***Cost is annualized over 6 years of expected equipment life
Note: Cost estimates based staff conversations with vendors

Total Enclosures

A total enclosure is defined in PR 1430 as a permanent containment 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 breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust. PR 1430 requires that within six months of rule adoption, facilities that are conducting metal grinding or metal cutting within a building, must conduct all metal grinding and metal cutting operations inside a total enclosure and minimize the release of fugitive metal dust emissions from passages, doorways, and bay doors. For facilities not conducting metal grinding or metal cutting in a building prior to date of rule adoption, metal grinding and metal cutting operations are to be conducted within a total enclosure and minimize the release of fugitive metal dust emissions within 12 months of rule adoption. The primary intent of this requirement is to provide maximum containment and minimize fugitive metal dust emissions and odors generated from areas where metal grinding occurs. SCAQMD staff assumed that it would cost approximately $10 per square foot of wall area to convert an existing building to a total enclosure and that it would cost $118[8] per square foot of building space to construct a new total enclosure (i.e., construction of total enclosure without an existing building). Based on the proposed requirements of

[8] Based on 2016 Bureau of Labor Statistics Cost for New Industrial Building Construction, https://www.bls.gov/ppi/ppinaics236211.htm

PR 1430 four (4) facilities would be required to build a new total enclosure and three (3) facilities would be required to convert an existing building to a total enclosure. Based on the size of each facility's grinding operation, SCAQMD staff determined that this requirement would result in a capital cost of $1.4 million.

To further protect nearby sensitive receptors[9], PR 1430 would require some facilities to install negative air vented to pollution controls for the total enclosure. Specifically, an owner or operator that conducts metal grinding or metal cutting operations within 500 feet of a sensitive receptor that is not a school[10], or within 1,000 feet of a school, pre-school, early headstart or headstart, measured from the edge of the total enclosure to the property line of the nearest sensitive land use would be required to vent the total enclosure to an emission control device no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. The in-draft velocity of the total enclosure with negative air shall be continuously maintained at a minimum of 200 feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-up doors. The in-draft velocity of 200 fpm was selected based on U.S. EPA Method 204 – Criteria for and Verification of a Permanent or Temporary Enclosure. SCAQMD staff based the install negative air on an established cost formula from the sixth edition of the U.S. EPA's Air Pollution Control Cost Manual[11] that accounts for additional capital costs incurred for the purchase of equipment such as fans, motors, vents, ductwork, and doors and the installation cost for this equipment. Additionally, SCAQMD staff assumed that each of the 10 facilities required to install negative air for the total enclosure would need to purchase an anemometer[12] to ensure compliance with the continuous in-draft velocity requirements of the total enclosure at > 200 fpm. SCAQMD staff determined that the installation of negative air for ten (10) facilities would result in a capital cost of $850,975 and an additional $8,985 for the capital cost of anemometers.

Point Source Emissions Controls

Subdivision (e) – Metal Grinding and Cutting Emissions Requirements of PR 1430 requires emissions from metal grinding and metal cutting operations to be vented to an emission control device no later than 6 months after a Permit to Construct for the emission control device is issued by the Executive Officer. The emission control device shall not exceed a PM outlet concentration of 0.002 grains of particulate matter per dry standard cubic foot (gr/dscf). Also, PR 1430 requires that the final stage of any emission control device be fitted with HEPA filters or filter media rated by the manufacturer to achieve a minimum of

[9] Any residence including private homes, condominiums, apartments, and living quarters; daycare centers; health care facilities such as hospitals or retirement and nursing homes; long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

[10] Any public or private school, including early headstart education (birth to 3 years old), headstart education (3 to 5 years old), preschools (3-4 years old), and juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including kindergarten and grades 1 through 12, inclusive, but does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property, but does not include unimproved school property.

[11] Based on EPA Air Pollution Control Cost Manual, Sixth Edition, January 2002, https://www3.epa.gov/ttncatc1/dir1/c_allchs.pdf

[12] Based on vane anemometer by Omega, http://www.omega.com/pptst/HHF-SD2.html

99.97% control efficiency for 0.3 micron particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, and the National Fire Protection Association (NFPA) regarding safety. Further, all emission control devices are required to be operated at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD.

To assess the socioeconomic impacts of metal grinding and metal cutting point source emissions controls required by PR 1430, SCAQMD staff assumed facilities subject to the point source emissions control requirements of subdivision (e) that do not have a modern baghouse would be required to, at a minimum, install a cartridge type baghouse fitted with Polyester (PE) bags. Staff also assumed that facilities that do not meet the criteria specified in paragraph (e)(3) would be required to install HEPA filtration. Further, staff assumed that most facilities would not have adequate ventilation to meet the minimum hood induced capture velocity requirements.

Based on these assumptions SCAQMD staff determined that 18 of the affected facilities subject to the rule would need to install a new baghouse with adequate ventilation to meet the minimum hood induced capture velocity requirements. In addition to a new baghouse SCAQMD staff assumed that 13 of the affected facilities would require installation of HEPA filtration. Also, SCAQMD staff assumed that each baghouse required by PR 1430 would need to be properly maintained with replacement PE filter bags biennially and that each HEPA filtration unit would require new filters annually. Additionally, staff assumed that each emission collection system would need to conduct periodic smoke tests per paragraph (i)(4) to ensure adequate capture velocity consistent with paragraph (e)(4). Thus, SCAQMD staff estimated that the capital cost for metal grinding and metal cutting point source controls[13] would be approximately $7.8 million including an annual maintenance cost of approximately $4.45 million for biennial PE filter bag replacement[14] and annual HEPA filter replacement.[15] It should be noted that the annual maintenance cost for the baghouse and HEPA filtration includes an annual energy cost (i.e., $2.9 million annually for electricity use alone) for operation of the point source control devices.

Housekeeping

PR 1430 includes housekeeping requirements that are proposed to minimize fugitive metal emissions. All requirements would be effective within 30 days of rule adoption except for the requirements to conduct semi-annual roof top wet cleanings or vacuuming with a HEPA

[13] Based on U.S. EPA Air Pollution Control Cost Manual, Sixth Edition, January 2002, https://www3.epa.gov/ttncatc1/dir1/c_allchs.pdf

[14] Assumes change out of polyester cartridge bags biennially, estimated cost from Section 6 of EPA Air Pollution Control Cost Manual, Sixth Edition, January 2002 , Table 1.8: Bag Prices, average of polyester pulse jet, cartridge filter bags, (i.e. bag diameter 4-7/8 and 6-1/8 inches)

[15] Based on 2010 SCAQMD Rule 1420.1 Socioeconomic Analysis, estimated HEPA costs are: $2/ cubic feet per minute (cfm) for 1 - 10,000 cubic feet per minute(cfm); $1.75/cfm for 10,001 cfm - 80,000 cfm; $0.75/cfm for 80,001 cfm - 125,00 cfm.

vacuum. Upon surveying each facility subject to PR1430, SCAQMD staff concluded that most facilities currently conduct housekeeping measures much like the proposed requirements using mobile wet sweepers, however, some facilities do not possess the proper equipment to maneuver in confined areas near grinding and cutting equipment. Therefore, SCAQMD staff assessed an additional cost impact ranging of approximately $2,400 per additional HEPA vacuum[16]needed at each facility. As a result, SCAQMD staff determined that the additional housekeeping measures required by PR 1430 would result in a capital cost of approximately $62,000. Further, SCAQMD staff assumed that it would cost $68,000[17] annually to conduct roof washings required by the housekeeping requirements of the rule.

Source Tests

The proposed rule would require annual source tests for PM emissions once every 12 months to demonstrate compliance with the particulate emission standard of 0.002 grains per dry cubic foot. If an annual source test demonstrates that PM emissions were no more than 50% of the PM emission standard of 0.002 grains of particulate matter per dry standard cubic foot the next test for PM emissions from that emission control device may be performed no later than 24 months after the date of the most recent test.

Additionally, initial source tests for hexavalent chromium and multiple metal emissions would be required. Subsequent source tests for hexavalent chromium and multiple metal emissions are required once every 48 months to be harmonious with the AB2588 quadrennial cycle for evaluating risk. However, if a facility demonstrates metal grinding or metal cutting operations contain total chromium concentrations of 1% or less during the removal or disposal of any baghouse catch as determined by a metals analysis by X-ray fluorescence, the owner or operator is not required to source test once every 48 months. If an analysis by X-ray fluorescence demonstrates that a metal grinding or metal cutting operation contain greater than 1% of total chromium the owner or operator must resume the quadrennial schedule.

SCAQMD staff estimates that the cost per stack for an outlet emissions source test[18] are as follows: $5,000 for a PM outlet emissions source test, $7,500 for a hexavalent chromium emissions outlet source test, and $7,500 for a multiple metals emissions outlet source test. SCAQMD staff assumed that the cost to conduct a hexavalent chromium source test would exceed the cost of a metals analysis by X-ray fluorescence, therefore, the cost to comply with the source test requirements for the proposed rule is limited to source testing for outlet emissions of the following: PM, hexavalent chromium, and multiple metals. Based on these estimated costs SCAQMD staff assumed it would cost approximately $288,000 annually.

[16] Based on cost of a single 15 gallon HEPA Vacuum, http://www.minutemanvac.com/minuteman-vac-x839-dry-vacuum.html

[17] Assumes a cost of $1,000 per washing and $250 of water use based on 2010 version of Rule 1420.1.

[18] Based on multi-metals source test costs for SCAQMD Rule 1420.2 Socioeconomic Analysis and communication with SCAQMD Source Testing staff on 1/3/2017.

Table 4 summarizes the projected compliance costs by industry. The non-ferrous forging industry (NAICS 332112) would bear the largest share of compliance costs (74% or an annual average of $4.5 million) primarily due to the construction and maintenance of baghouses.

Table 4: Projected Compliance Costs by Industry for Affected Facilities that Potentially Could Need Additional Pollution Controls (2015 Dollars)

Industry that Typically Uses the Equipment (6-Digit NAICS Code)	Number of Facilities	Projected Annual Compliance Costs	
		4% Real Interest Rate	1% Real Interest Rate
Non-Ferrous Forging (332112)	11	$4,536,565	$ 4,395,555
Iron and Steel Forging (332111)	8	$ 1,351,856	$ 1,305,802
Metal Heat Treating (332811)	1	$ 55,425	$ 54,576
Fabricated Structural Metal Manufacturing (332312)	1	$ 224,945	$ 219,197
Bolt, Nut, Screw, Rivet, and Washer Manufacturing (332722)	1	$ 3,190	$ 3,147
All Industries		**$ 6,171,980**	**$ 5,978,277**

Table 5 shows the range of projected compliance costs by facility. It is important to note that some facilities appear to be disproportionately affected by the rule, however, these facilities have no existing air pollution controls for their metal grinding or metal cutting operation. As a result, the facilities will be required to install sufficient air pollution controls to comply with PR 1430. By comparison, some other facilities that have significantly lower compliance costs have existing controls that require minimal upgrades to comply with PR 1430.

Table 5: Projected Compliance Costs by Facility that Potentially Could Need Additional Pollution Controls (2015 Dollars)

Facility	Projected Annual Compliance Costs	
	4% Real Interest Rate	**1% Real Interest Rate**
Facility A	$3,190	$3,147
Facility B	$3,190	$3,147
Facility C	$23,549	$22,937
Facility D	$50,020	$47,558
Facility E	$55,425	$54,576
Facility F	$65,996	$63,776
Facility G	$72,447	$72,259
Facility H	$114,591	$108,447
Facility I	$174,793	$169,370
Facility J	$198,308	$198,210
Facility K	$216,891	$210,743
Facility L	$218,779	$208,450
Facility M	$224,945	$219,197
Facility N	$233,585	$228,388
Facility O	$253,118	$242,645
Facility P	$281,085	$272,797
Facility Q	$284,639	$275,715
Facility R	$583,629	$570,517
Facility S	$660,334	$645,400
Facility T	$752,993	$735,241
Facility U	$826,235	$798,063
Facility V	$874,238	$827,693
Total 22 Facilities	**$6,171,980**	**$5,978,277**

MACROECONOMIC IMPACTS ON THE REGIONAL ECONOMY

The REMI model (PI+ v2.0.3) was used to assess the total socioeconomic impacts of PR 1430. The model is appropriate to be used for evaluating the impacts from a policy change and links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and for each county, it is comprised of five interrelated blocks: (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares.[19]

The assessment herein is performed relative to a baseline where PR 1430 would not be implemented. The proposed rule would create a policy scenario under which the affected facilities would incur annual compliance costs totaling $6.0 million to $6.2 million to install additional control equipment and comply with other requirements of PR 1430. The annualized compliance costs are assumed to start in 2017 and would remain the same until 2035, the last year of the analysis time frame.

Direct effects of PR 1430 have to be estimated and used as inputs to the REMI model in order for the model to assess secondary and induced impacts for all the actors in the four-county economy on an annual basis and across a user-defined horizon (2017 to 2035). Direct effects of the proposed rule include additional costs to the affected entities and additional sales, by local vendors, of equipment, devices, or services that would meet the proposed requirements. While compliance expenditures may increase the cost of doing business for affected facilities, the purchase of additional baghouses and HEPA filters combined with spending on total enclosures, source tests, and housekeeping measures, may increase sales in other sectors. Table 6 lists the industry sectors modeled in REMI that would either incur cost or benefit from the compliance expenditures.[20]

[19] Within each county, producers are made up of 66 private non-farm industries, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 age/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. (For details, please refer to REMI online documentation at http://www.remi.com/products/pi.)

[20] It is worth mentioning that improved public health due to reduced air pollution emissions may also result in a positive effect on worker productivity and other economic factors; however, public health benefit assessment requires the modeling of air quality improvements. Therefore, it is conducted for Air Quality Management Plans and not for individual rules or rule amendments.

Table 6: Industries Incurring *vs.* Benefitting from Compliance Costs/Spending

Source of Compliance Costs	REMI Industries Incurring Compliance Costs (3-digit NAICS)	REMI Industries Benefitting from Compliance Spending (NAICS)
Baghouse	Fabricated Metal Manufacturing (332)[21]	*One-time-Capital:* Machinery Manufacturing (333)
HEPA Filters		*One-time-Capital:* Machinery Manufacturing (333)
Building Enclosure		*One-time-Capital:* Construction (236)
Housekeeping Vacuum		*One-time-Capital:* Electric Equipment and Appliances (335)
Building Enclosure Negative Air & Anemometer		*One-time-Capital:* Computer and Electronics (334)
Smoke and Source Tests		*Recurring Cost:* Professional, Scientific, and Technical Services (541)
Roof Washing		*Recurring Cost:* Construction/Contractors (238)
Energy\Utilities		*Recurring Cost:* Utilities (221)
Baghouse Maintenance		*Recurring Cost:* Professional, Scientific, and Technical Services (541)

PR 1430 is expected to result in approximately 46 jobs forgone between 2017 and 2035 when a 4-percent real interest rate is assumed (approximately 44 jobs with a 1-percent real interest rate). The projected job impacts represent about 0.001 percent of the total employment in the four-county region. As presented in Table 7, almost all major sectors of the regional economy would incur minor jobs forgone from induced and secondary impacts of PR 1430.

[21] See Table 5 for the 6-digit breakdown of affected facilities in the fabricated metal manufacturing sector.

It is estimated that in 2017, 32 additional jobs would be created in the overall economy. Positive job impacts in the sector of manufacturing (NAICS 31-33) are due to purchase of various types of control equipment by the affected facilities (as presented in Table 6). The sector of professional and technical services (NAICS 541) are projected to gain 8 jobs annually from additional demand for equipment installation and maintenance as well as expenditures made by the affected facilities to conduct source tests and ambient monitoring analysis as well as filing compliance plans.

Although the manufacturing sector would bear the majority of estimated total compliance costs of the PR 1430, the regional industry job impact is projected to be relatively small (annual average of 15 jobs foregone between 2017 and 2035). This is because other businesses in the manufacturing sector, specifically in the machinery manufacturing industry, are expected to benefit from the increased sale of various types of control equipment, thus offsetting the direct effect of compliance costs incurred by other manufacturing facilities. In earlier years, positive job impacts from the expenditures made by the affected facilities would more than offset the jobs forgone from the additional cost of doing business.

Table 7: Job Impacts of Proposed Rule

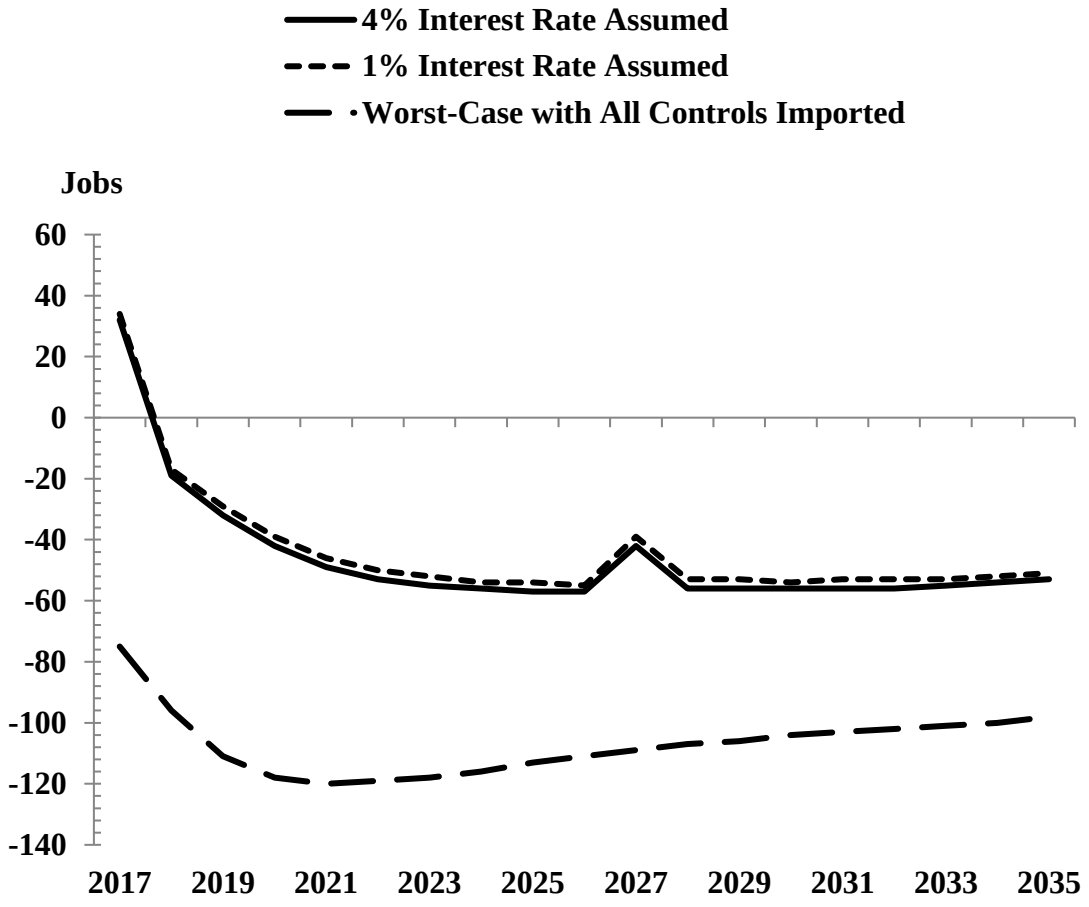
Industries (NAICS)	2017	2025	2035	Average Annual Jobs (2017-2035)	Average Annual Baseline Jobs without Rule (2017-2035)	% Change from Baseline Jobs
Construction (23)	9	-5	-3	-3	503,355	-0.0007
Utilities (22)	3	2	2	2	18,671	0.0122
Machinery (333)	8	2	1	2	27,645	0.0088
Fabricated Metal (332)	-3	-13	-13	-12	92,645	-0.0126
Rest of Manufacturing (31-33)	0	-7	-6	-6	526,180	-0.0011
Total Manufacturing (31-33)	5	-18	-18	-15	646,469	-0.0023
Wholesale trade (42)	1	-3	-2	-2	491,455	-0.0004
Retail trade (44-45)	-3	-8	-7	-7	1,010,271	-0.0007
Professional and technical services (54)	13	7	6	8	947,238	0.0008
Food services and drinking places (722)	0	-4	-4	-4	737,569	-0.0005
Government (92)	1	-4	-5	-3	912,517	-0.0004
Other Industries	2	-23	-22	-20	6,858,324	-0.0001
Total	**32**	**-57**	**-53**	**-46**	**12,125,869**	**-0.0004**

*Note: Jobs includes self-employment.

Figure 1 presents a trend of job gains and losses from 2017 to 2035. During the first few years of implementation, small positive job impacts would be expected in sectors associated with the installation of controls and the construction of enclosures. Negative job impact would lessen slightly in year 2027 when the affected facilities would need to replace point-source controls at the end of their equipment life. The replacement purchase in itself would act as a temporary stimulus to the regional economy if, as assumed under the primary scenario, part of this spending would benefit local vendors of pollution controls and installation services by increasing their sales volume.

In addition, staff has analyzed an alternative scenario (worst-case) where the affected facilities would not purchase any controls or services from providers within the Basin, which would result in an average of 107 jobs forgone annually.

Figure 1: Projected Regional Job Impact, 2017-2035



Competitiveness

The additional cost brought on by PR 1430 would increase the cost of services rendered by the affected industries in the region. The magnitude of the impact depends on the size and diversification of, and infrastructure in a local economy as well as interactions among industries. A large, diversified, and resourceful economy would absorb the impact described above with relative ease.
Changes in production and service costs would affect prices of goods produced locally. The relative delivered price of a good is based on its production cost and the transportation cost of delivering the good to where it is consumed or used. The average price of a good at the place of use reflects prices of the good produced locally and imported elsewhere.

It is projected that the manufacturing sector, where most of the affected facilities belong, would experience a rise in its relative cost of production by 0.003 percent and a rise in its delivered price by 0.001 percent in 2025 from the implementation of PR 1430.

RULE ADOPTION RELATIVE TO THE COST EFFECTIVENESS SCHEDULE

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether the rules being proposed for adoption are considered in the order of their 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. PR 1430 would reduce metal particulate, some of which are toxic air contaminants, and thus was not ranked by cost-effectiveness relative to other AQMP control measures in the 2012 AQMP.

INCREMENTAL COST-EFFECTIVENESS

As previously discussed, PR 1430 is regulating a source category that is currently unregulated and is not required to have an SCAQMD permit. Implementation of the proposed rule will result in substantial reductions in particulate matter as some facilities have no pollution controls and those with pollution controls have shown operational and design issues that are not properly capturing point source emissions and can lead to fugitive emissions. Evidence of operational and design issues with pollution controls include observations of visible emissions that are escaping ducting to pollution controls and visible emissions that are not being captured through hoods indicating that the collection efficiency is not appropriate. At this time, there is not sufficient information to estimate the baseline PM emissions as much of these emissions are fugitive and cannot be quantified. As a result, the overall PM emission reductions from this proposed rule cannot be quantified and staff cannot calculate the cost-effectiveness of Proposed Rule 1430 at this time.

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ATTACHMENT I

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment for Proposed Rule 1430 – Control of Emissions From Metal Grinding Operations at Metal Forging Facilities

February 2017

SCAQMD No. 01112017SW
State Clearinghouse No: 2017011019

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PREFACE

This document constitutes the Final Environmental Assessment (EA) for Proposed Rule (PR) 1430 - Control of Emissions From Metal Grinding Operations at Metal Forging Facilities. A Draft EA was released for a 30-day public review and comment period from January 11, 2017 to February 10, 2017. Analysis of PR 1430 in the Draft EA did not result in the identification of any environmental topic areas that would be significantly adversely affected. Three comment letters were received from the public regarding the analysis in the Draft EA. The comment letters received relative to the Draft EA and responses to individual comments are included in Appendix E of this document.

In addition, subsequent to release of the Draft EA, modifications were made to PR 1430 and some of the revisions were made in response to verbal and written comments received. To facilitate identification, modifications to the document are included as underlined text and text removed from the document is indicated by ~~strikethrough~~. To avoid confusion, minor formatting changes are not shown in underline or strikethrough mode.

Staff has reviewed the modifications to PR 1430 and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the draft document. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5. Therefore, this document now constitutes the Final EA for PR 1430.

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CHAPTER 1

PROJECT DESCRIPTION

Introduction

California Environmental Quality Act

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Project Description

INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD or District) in 1977[1] as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin and Mojave Desert Air Basin. By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the District[2]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP[3]. The AQMP is a regional blueprint for how the SCAQMD will achieve air quality standards and healthful air and the Draft Final 2016 AQMP[4] contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases, and toxics. In particular to toxics emissions, more information has become available about metal forging facilities with metal grinding and cutting operations indicating that more controls are needed to address fugitive toxic particulate emissions, especially metal particulates. Since heavy metals, such as nickel, cadmium, hexavalent chrome, cobalt and metal particulate have high relative risks compared to other toxics and can create health problems from ingestion, dermal exposure, and through consumption of breast-milk, the Draft Final 2016 AQMP contains SCAQMD's air toxics control strategy TXM-01 - Control of Metal Particulate from Metal Grinding Operation, to specifically address reducing metal particulate emissions from metal grinding activities at metal forging facilities, metal foundries, and plating operations.

Proposed Rule (PR) 1430 - Control of Emissions From Metal Grinding Operations at Metal Forging Facilities, would partially implement TXM-01, by reducing toxic emissions, particulate matter emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. Both metal grinding and metal cutting operations are currently exempt from SCAQMD permits, and as such operations are currently an unregulated source category. Although some of the metal grinding and metal cutting operations have air pollution controls, most are not permitted and do not have controls. PR 1430 will ensure that metal particulate emissions are appropriately vented to air pollution control equipment, fugitive emissions are contained within a building enclosure, and housekeeping measures are implemented to further minimize emissions from metal grinding and metal cutting operations at metal forging facilities. Upon implementation, PR 1430 would be expected to reduce health risks and minimize public nuisance and odors affecting neighboring businesses and residents.

PR 1430 would apply to metal forging facilities located within SCAQMD's jurisdiction and classified by the North American Industry Classification System (NAICS) code for ~~these industries: 332111 - Iron and Steel Forging, and 332112 - Nonferrous Forgings~~ the fabricated metal manufacturing sector (NAICS 332). There are 22 facilities within the District with 14 located in Los Angeles County, four located in Orange County, and four located in San Bernardino County.

[1] The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch. 324 (codified at Health and Safety Code §§40400-40540).
[2] Health and Safety Code §40460(a).
[3] Health and Safety Code §40440(a).
[4] SCAQMD, Draft Final 2016 Air Quality Management Plan. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draft-final-aqmp/clean/2016finaldraftaqmpdec2016(clean).pdf

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA), California Public Resources Code §21000 *et seq.*, requires environmental impacts of proposed projects to be evaluated and feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects to be identified and implemented. The lead agency is the "public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment" (Public Resources Code §21067). Since the SCAQMD has the primary responsibility for supervising or approving the entire project as a whole, which is a proposed District rule, it is the most appropriate public agency to act as lead agency (CEQA Guidelines[5] §15051 (b)).

CEQA requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented if feasible. The purpose of the CEQA process is to inform the lead agency, responsible agencies, decision makers and the general public of potential adverse environmental impacts that could result from implementing PR 1430 (the proposed project) and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. The SCAQMD's regulatory program was certified by the Secretary of Resources Agency on March 1, 1989, and has been adopted as SCAQMD Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment.

PR 1430 would regulate toxic emissions, particulate matter emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. Because the proposed project requires discretionary approval by a public agency, it is a "project" as defined by CEQA. The proposed project will reduce metal particulate matter (PM) emissions, and the odors and associated health risks associated with these emissions and will provide an overall environmental benefit to air quality. However, SCAQMD's review of the proposed project also shows that implementation of PR 1430 may also create secondary adverse effects on the environment. SCAQMD's review of the secondary adverse effects shows that PR 1430 would not have a significant adverse effect on the environment. Thus, the type of CEQA document appropriate for the proposed project is an Environmental Assessment (EA). The EA is a substitute CEQA document, prepared in lieu of a Negative Declaration (CEQA Guidelines §15252), pursuant to the SCAQMD's Certified Regulatory Program (CEQA Guidelines §15251 (l); codified in SCAQMD Rule 110). The EA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental impacts of the proposed project; and, 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

The SCAQMD, as lead agency for the proposed project, ~~has~~ prepared the<u>is</u> Draft EA showing no significant adverse impacts pursuant to its Certified Regulatory Program. The<u>is</u> Draft EA includes an Environmental Checklist and project description. The Environmental Checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. Because PR 1430 will have no statewide, regional or areawide significance, no CEQA scoping meeting is required to be held for the proposed project pursuant to Public Resources Code §21083.9(a)(2). Further,

[5] The CEQA Guidelines are codified at Title 14 California Code of Regulations §15000 *et seq.*

pursuant to CEQA Guidelines §15252, since no significant adverse impacts were identified, no alternatives or mitigation measures are required to be included in the~~is~~ Draft EA. The analysis in Chapter 2 supports the conclusion of no significant adverse environmental impacts. The Draft EA was released for a 30-day public review and comment period from January 11, 2017 to February 10, 2017 and three comment letters were received. All ~~Any~~ comments received during the public comment period on the analysis presented in the~~is~~ Draft EA ~~will~~ have been responded to and included in Appendix E of ~~the~~ this Final EA.

Subsequent to release of the Draft EA, minor modifications were made to PR 1430 and some of the revisions were made in response to verbal and written comments on the project's effects. Staff has reviewed the modifications to PR 1430 and concluded that none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the draft document. In addition, revisions to PR 1430 in response to verbal or written comments would not create new, avoidable significant effects. As a result, these minor revisions do not require recirculation of the EA pursuant to CEQA Guidelines §15073.5 and §15088.5.

Prior to making a decision on the adoption of PR 1430, the SCAQMD Governing Board must review and certify the Final EA as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PR 1430.

PROJECT LOCATION

PR 1430 would affect 22 metal forging facilities located within SCAQMD's jurisdiction, with 14 located in Los Angeles County, four located in Orange County, and four located in San Bernardino County. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin) (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of 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. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. A federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that 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).

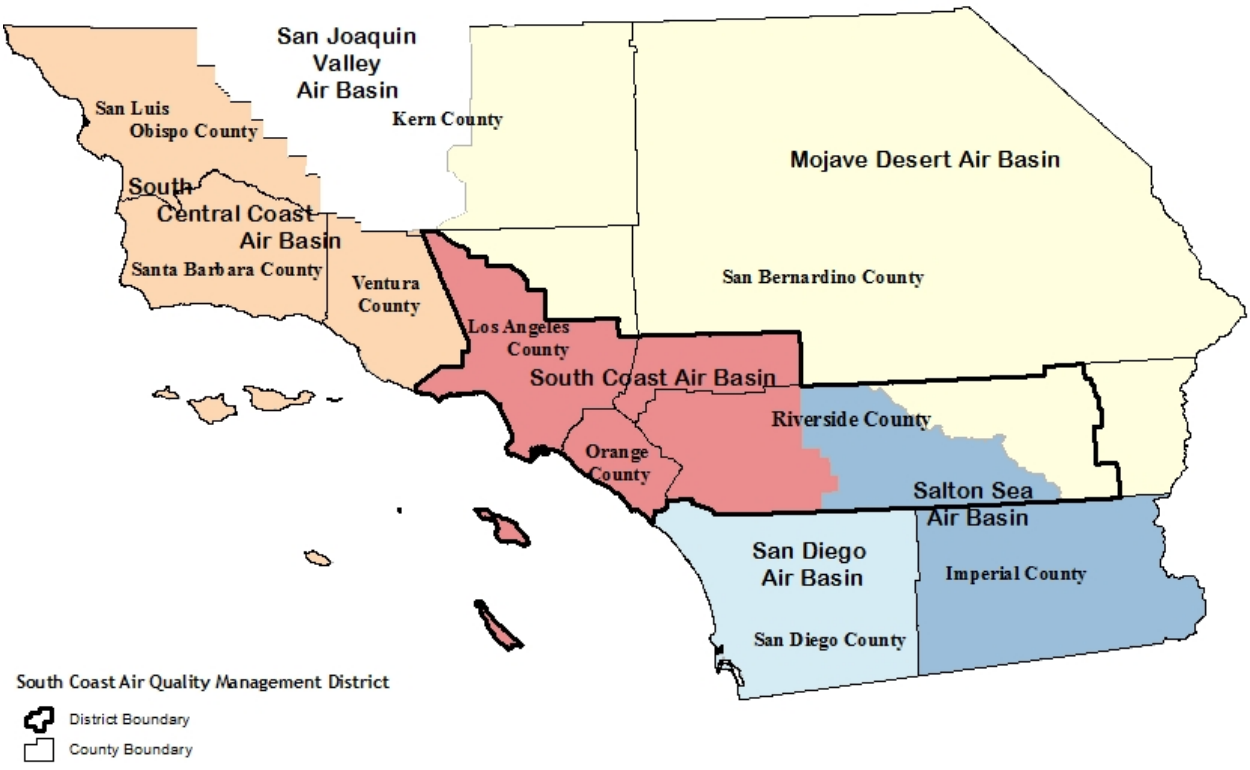


Figure 1-1
Southern California Air Basins

PROJECT BACKGROUND

Metal grinding and metal cutting operations at metal forging facilities are currently exempt from SCAQMD permitting requirements and there are currently no SCAQMD source-specific regulatory requirements for these activities. Through the rule development process, SCAQMD staff have obtained additional information about metal grinding and metal cutting operations at metal forging facilities from collecting particulate samples, conducting source tests, conducting ambient monitoring, and site visits. The SCAQMD has identified 22 active metal forging facilities in the District that conduct metal grinding operations and SCAQMD staff visited many of these facilities. The following are key findings from the site visits:

- Prior to November 2016, there were five facilities that were conducting metal grinding operations in the open air. Because of the fugitive nature of grinding operations, with no containment structure such as an enclosure and no air pollution control device, the metal particulates were being released in the open air and into the community. One of the five facilities recently moved their grinding operations within a building enclosure and is in the process of constructing a total enclosure. Another facility is in the process of moving their grinding operations within an enclosure also.
- Although air pollution control equipment is not currently required by the SCAQMD, 14 forging facilities currently have some type of air pollution control device. However, many

baghouses did not appear to have proper ventilation, operation, and maintenance of their air pollution control equipment.

- Housekeeping measures varied at each facility. There was variation in the cleaning method, such as using brooms to mobile vacuum sweepers, variation in the frequency, and variation in the areas cleaned, such as cleaning the inside and/or outside of a building.

As a result, some facilities were identified as currently conducting metal grinding and metal cutting operations with no air pollution control equipment while other facilities were identified as having air pollution control equipment that are not properly operated and maintained.

Metal grinding is a common material removal and surface preparation process that shapes and finishes the surfaces of metal parts. Both heavy and light industrial processes such as metal foundries and forging and plating operations that produce parts for the aerospace, automotive, and oil and gas industry conduct metal grinding. The grinding process employs an abrasive device, such as a rotating wheel that is brought into controlled contact with the metal part's surface, to smooth slight imperfections and remove tiny metal pieces from the part. The grinding process generates metallic chips and dust as a by-product.

Metal grinding is prone to generate fugitive metal particulate, particularly if the grinding operation is not properly controlled. The results of sampling data collected by SCAQMD staff at multiple forging facilities have shown that fugitive metallic dust generated from metal grinding activities contain toxic air contaminants (TACs) such as cadmium, hexavalent chromium, cobalt, and nickel. Additionally, extensive ambient air monitoring conducted at one forging facility has confirmed elevated concentrations of nickel in the ambient air due to metal grinding activities.

In conclusion, SCAQMD staff determined that PR 1430 is necessary to reduce toxics and metal particulate emissions from metal grinding and metal cutting operations at metal forging facilities. It would ensure that these operations have the appropriate pollution control equipment, are conducted within an enclosure so that fugitive emissions that do not make it to the control device are contained, and basic housekeeping requirements are followed to ensure any accumulation of metal particulate in or around grinding operations is not re-entrained into the air or tracked outside of the facility.

TECHNOLOGY OVERVIEW

The following discussion provides a general overview of the manufacturing processes at metal forging facilities, the associated emission sources, and emission control options.

Metal Forging

Forging is a manufacturing process where metal is pressed, pounded, or squeezed under great pressure into high strength parts known as forgings. The process is normally performed hot by preheating the metal to a desired temperature before it is worked. Any metal can be forged, however, some of the most common metals include, carbon steel, alloy steel, stainless steel, very hard tool steels, aluminum, titanium, brass, copper, cobalt, nickel, and molybdenum. These metals are found in billets or ingots that are delivered to the respective forging company. The forging industry is composed of plants that: make parts to order for customers (custom forgings), make parts for their own company's internal use (captive forgings), or make standard parts for resale (catalog forgings). Metal forging creates parts that vary in size, shape, and sophistication. Some of the largest customer markets include: aerospace, national defense, automotive, oil industry,

agriculture, construction, and general industrial equipment. The applicable NAICS code for ~~these industries are 332111, Iron and Steel Forging, and 332112 Nonferrous Forgings~~ metal forging facilities subject to PR 1430 are all classified as being in the fabricated metal manufacturing sector (NAICS 332). The following process description reflects the operational characteristics at metal forging facilities. Metal forging is done because it strengthens the material by sealing cracks and closing empty spaces within the metal. The hot forging process will highly reduce or eliminate inclusions in the forged part by breaking up impurities and redistributing their material throughout the metal work. Forging a metal will alter the metal's grain structure creating a material of increased strength. This makes forging more advantageous than casting or machining. In metal forging operations, a metal ingot or billet is prepared to the correct pre-dimensions prior to going through forging. This can include cutting, sawing, grinding, or torch cutting. The following paragraphs describe the various processes involved in preparation of the forging process:

Billet Cutting or Sawing

A processed metal billet or ingot is received by the metal forging facility. In order to forge the piece of metal, the metal forging facility may need to reduce the size. This is done by cutting or sawing. At the metal forging facility, the unprocessed metal billet or ingot is place in a sawing machine. The sawing machine is equipped with a blade capable of cutting into a metal billet or ingot at a slow rate. Typically, a continuous flow of metal removal fluid and coolant is supplied where the blade makes contact with the metal. This helps maintain the blade at a cooler temperature with a co-benefit of preventing metal emissions. The metal ingot or billet is cut to the desired dimensions.

Metal Grinding Operations

Irregularities observed on the billet or ingot can be removed via grinding which will create the desired finish and dimensions prior to forging. Based on site visits to the forging facilities, SCAQMD staff identified five categories of metal grinding activities: billet grinding, swing grinding, stand grinding, large and small hand grinding, and torch cutting. Based on observations, all of these activities have the ability to generate fugitive metal particulates if not properly controlled. Each of these metal grinding activities are discussed below.

Billet grinding

Billet grinding consists of large traveling grinders designed to prepare large billets prior to forging. The billet grinder would traverse the entire length of the billet, going back and forth to create the appropriate dimensions. All billet grinders that will be subject to PR 1430 are currently vented to baghouses without high efficiency particulate arrestor (HEPA) filters.



Swing grinding

Swing grinders are rugged, heavy duty grinders with full lateral movement to prepare medium sized billets. An employee manually operates them. Multiple levels of control were observed ranging from a baghouse with HEPA filters to no air pollution controls.



Stand grinding

Stand grinders are designed for smaller castings and forging. Mounted in a permanent position, utility grinders have a slotting wheel on one end for reaching into recesses of the material. Multiple levels of controls were observed ranging from venting to a baghouse to not venting to any air pollution controls.



Large and small grinding

Hand grinding involves using power tools for preparing, cutting, grinding, and polishing forgings of various sizes. Multiple hand grinding stations can be in one room or one area. Larger forgings utilize larger hand grinders, while smaller forgings utilize smaller hand grinders.



Torch Cutting

Torch cutting is a process by which metal is preheated with a flame and then oxidized rapidly and removed by a jet of oxygen issued centrally through the preheating flame. Torch cutting in the metal forging industry often uses acetylene gas and is used to remove flash (excess metal) from large metal parts that have been forged. Basic torch cutting equipment consists of two high-pressure cylinders (one apiece for oxygen and acetylene) and two corresponding pressure regulators. A dual-line hose transfers oxygen and acetylene from the regulators to the torch handle. The torch handle can hold a cutting attachment or cutting tip that controls the thickness of metal being cut, along with the gas pressures set at the regulators. Torches that use oxygen and acetylene reach a working temperature of 5,620 degrees Fahrenheit (^{o}F).



Heating

Metal billets or ingot are heated to the desired temperature prior to and/or during the forging process. The heated metal billets or ingots become malleable and are able to be forged. Aluminum alloys are heated to 800 °F, while titanium and nickel are heated to temperatures between 1,700 and 2,300 °F. Furnaces range in heating capacity and size, but typically use natural gas for heating. The combustion of natural gas produces NO_x, SO_x, and combustion related PM emissions. The furnaces are subject to SCAQMD permitting requirements and are evaluated by SCAQMD staff. NO_x is regulated by SCAQMD Rule 1147 - NO_x Reductions from Miscellaneous Sources for Non-RECLAIM facilities. Facilities with NO_x emissions that exceed more than four tons per year are regulated by SCAQMD Regulation XX - Regional Clean Air Incentives Market (RECLAIM). Non-combustion related emissions, such as emissions generated in the oven space of the furnace produced as result of refractory brick decomposition or off gassing of metals are unknown at this time. Further studies of non-combustion related emissions from metal furnaces are needed.

Forging

Forging includes pressing, hammering, rolling, or piercing of metal using a mechanical tool. The type of forges discussed herein are drop forge press, hammer press, and ring

rollers. During the forging process, a lubricant is applied to facilitate the release of die and forging material.

Drop Forge
A drop forge is a forging made in a closed or impression die under a drop or steam hammer. A closed die forging is formed to the required shape and size by machined impression in specifically prepared dies that exert three-dimensional control on the workpiece. Excess metal, known as flash, that did not form in the die will be removed in finishing operations. Open die forging involves the repeated striking of metal in a die to get the desired dimension. The metal piece may be rotated or moved around to get the desired shape.

Hammer Press
It is a forging made by means of a hammer. The action of the hammer is that of an instantaneous application of pressure in the form of a sudden blow.

Ring Rollers
A metal ring preform is rolled between two rolls that move toward each other to form a continuously reducing gap.

Lubricant
A liquid or powder lubricant is applied to facilitate the release of the die and forged metal. The lubricant can be applied multiple times depending on the forging operation. Visible emissions are observed when lubricants contact the die and forged metal. VOC levels in lubricants are regulated by SCAQMD Rule 1144 - Metalworking Fluids and Direct-Contact Lubricants. Similar to non-combustion emissions from the furnace, emissions from heated processes need further study.

Finishing Operations
Following the creation of a forging, physical or chemical methods are utilized to produce dimensional corrections to the forging or to perform surface treatment. While preparation operations remove irregularities, finishing operations remove flashing and scale deposits. Methods observed include abrasive blasting, buffing/polishing, sawing/cutting, and grinding.

Abrasive Blasting
Abrasive blasting is a stream of abrasive material that is propelled against a surface under high pressure to alter the surface. The abrasive material can be composed of metal, silica, or other material. The abrasive blasting process is used to smooth or "clean" forged material. Fugitive metal particulates from the forging and shot material may be generated if not adequately controlled. These emissions can be controlled by operating in a blast cabinet or room vented to an air pollution control system. Varying housekeeping measures can be implemented to reduce the accumulation of particles that can become fugitive. SCAQMD permits are required if the volume of the blasting cabinet is greater than 53 cubic feet. Abrasive blasting is regulated under SCAQMD Rule 1140 - Abrasive Blasting.

Buffing/Polishing
Polishing and buffing are finishing processes for smoothing a workpiece's surface using an abrasive and a work wheel or a leather strop.

Sawing/Cutting
It is used to remove portions of forged metal that are not desired in the finished product. This can be flash material or parts of the forging that may be needed to be changed to meet the correct dimensions.

Grinding
Similar to the metal grinding activities conducted during the pre-metal forging operations, grinding is also conducted during the post-metal forging operations to further refine the metal surfaces. The grinding types include billet grinding, swing grinding, stand grinding, large and small hand grinding, and torch cutting. All of these activities have the ability to generate fugitive metal particulates if not properly controlled.

Controlling Emissions From Metal Forging
PR 1430 has been developed in order to reduce metal particulate emissions, health risks and odors from metal grinding and metal cutting operations at metal forging facilities. The key emission release points for metal grinding and metal cutting activities are point source emission stacks and fugitive emissions. Uncontrolled grinding that is conducted in the open air is of greatest concern because emissions are generated at the point of contact where the abrasion or removal of metal occurs. These metal particulates get entrained in the air and dispersed both on and off the property depending on meteorological conditions or they accumulate in metal removal areas and get tracked off the property by foot or vehicular traffic. For these reasons, an air pollution control system with effective capture and control efficiencies is necessary. In addition, enclosures and capture technology are essential for capturing the emissions to be fed into the air pollution control system.

Potential methods for reducing emissions and odors from metal grinding and metal cutting operations include: 1) relocating metal grinding and metal cutting activities within permanent enclosures to ensure that fugitive emissions that are not routed to an air pollution control device are contained within the enclosure; 2) capturing and controlling the metallic chips and dust through add-on air pollution control devices such as cyclones, baghouses and HEPA filter technology; 3) employing routine housekeeping measures such as wet cleaning or vacuuming to ensure that any accumulation of metal particulates in or around grinding and cutting operations is not re-entrained into the air or tracked outside of the facility; 4) following material storage and disposal procedures; and, 5) conducting routine maintenance of air pollution control devices.

The following discussion describes the various strategies to first contain and collect emissions and then route emissions from point sources to air pollution control equipment.

Containment and Collection Strategies

Containment
An enclosure is a structure that can be an effective containment tool to ensure that fugitive metal dust generated from grinding activities conducted inside the enclosure remains inside the enclosure. The design of the structure will determine the effectiveness of the enclosure's containment ability as well as the collection efficiency of air pollution control devices located downstream. As illustrated in Figure 1-2, there are four types of enclosures: Temporary Enclosure; Building; Total Enclosure; Total Enclosure with Negative Air. The following provides a general description of each type of enclosure.

- A temporary enclosure is a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter with a floor and a roof. As shown in the figure below, one side of the structure is open.
- A building is a type of enclosure that is a permanent containment structure, completely enclosed with a floor, four walls, or an entire perimeter, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, and run-off), with openings to allow ingress and egress for people and vehicles, but is not necessarily free of breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust to escape.
- A total enclosure is a permanent containment structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, and run-off), with limited openings to allow access and egress for people and vehicles, that is free of breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust to escape.
- A total enclosure with negative air (e.g., air being pulled or drawn into the building) that is vented to pollution control equipment is a total enclosure with negative airflow. This total enclosure must meet the industrial ventilation guidelines at each opening and the air within the enclosure is vented to an air pollution control device.

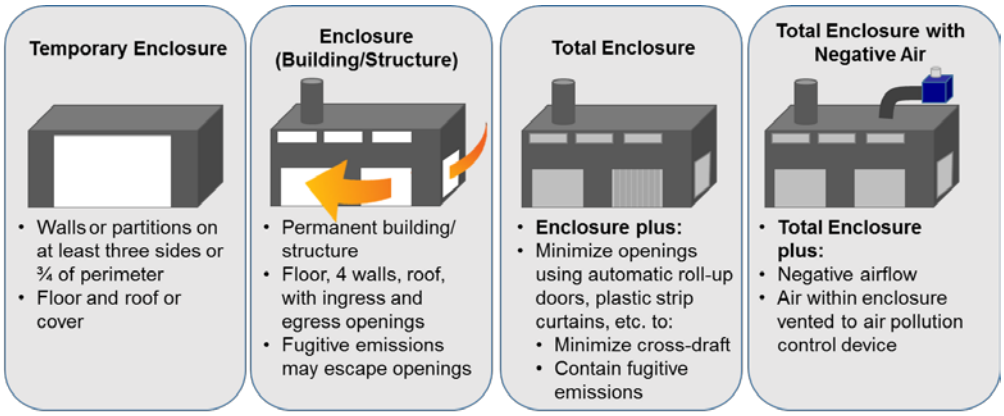


Figure 1-2
Types of Enclosures

Collection

A collection system allows air and emissions of particulate matter (PM) to be collected. Designing air pollution control equipment with ventilation in a manner that is consistent with the Industrial Ventilation Guidelines will ensure that metal PM can be captured and delivered to the air pollution control equipment. The collection system can be designed to capture emissions from an individual point source such as a grinding station, or from the entire enclosure. The collection system consists of an intake port, ducting, and a device that creates negative air to draw the emissions away from the individual point source or the entire enclosure. In order to consistently achieve a desired capture efficiency, the collection system needs to be properly maintained, which includes assuring proper intake flow rate, duct integrity, and proper positioning of the grinding activity to the intake vent.

Point Source Emission Control Technologies

Baghouses, HEPA filters, and cyclones, are technologies typically used to control PM emissions at metal forging facilities. These technologies can be connected in series to further control PM emissions and reduce the wear and tear on downstream processes.

Baghouse

A baghouse is an air filtration control device designed to remove PM from an exhaust gas stream using filter bags, cartridge-type filters, or envelope-type filters. A baghouse consists of the following components: filter medium and housing for the filter, filter cleaning device, collection hopper, shell, and fan. Most baghouse designs in the United States consist of long cylindrical tubes (bags) made of fabric which acts as the filter medium. A baghouse functions like a vacuum cleaner with a fan either blowing air from the grinding source through (positive pressure) the filter or drawing air into (negative pressure) the filter. When PM laden air flows to the inlet of a baghouse, the PM is captured in the filter bags inside the baghouse and filtered air flows from the outlet of the baghouse. Dust layers (dust cakes) deposit on the surface of the bags which need to be cleaned periodically to ensure proper baghouse function.

Effective performance of a baghouse is determined by pressure drop which is a measurement of the difference in air pressure between the clean and dirty sides of the filter. Static pressure gauges can be installed at the inlet and outlet of the fabric filter to determine the pressure drop across the filter. In addition, baghouses can be equipped with a bag leak detection system (BLDS) to continuously monitor the performance of the baghouse functions by detecting early bag leak or malfunction. A BLDS consists of a stainless steel probe that is energized with a direct current (DC) electrical voltage. When the particles flow near the probe placed in the PM laden exhaust gas stream, the small current changes (called triboelectric current) in its electric field are measured.

Pressure drop monitoring is a useful indicator of baghouse performance since pressure drop measurements can help determine if the filter media is being properly cleaned and whether the baghouse is operating in accordance with manufacturer specifications. For example, during operation of the baghouse, an increased pressure drop signals that the filter media is becoming clogged and needs to be cleaned. Similarly, a low pressure drop may indicate that there are holes in the filter media or a mechanical failure of baghouse components. In either case, there will be a reduction in the baghouse's ability to efficiently capture and control PM emissions. For these reasons, the filter media need to be cleaned periodically to prevent excessive increases in pressure drop, leaking bag, and improper baghouse function.

Baghouses are typically cleaned in sections, with jets of counter-flowing air used to blow dust build-up off of the filter and into a hopper. For many baghouse installations, the baghouse follows a routine cycle with the pressure drop increasing as the bag becomes coated with dust, and dropping back to a baseline value after it is cleaned. Common types of baghouses include reverse-air, pulse-jet and cartridge type baghouse. A reverse air-type baghouse uses a low pressure flow of air to break the dust cake and clean the bags of material build-up. Cleaning air is supplied by a separate fan which is normally smaller than the main stream fan, since only one compartment is cleaned at a time. A pulse jet-type baghouse uses a high pressure jet of compressed air to back-flush the bags. Cleaning is performed while the baghouse remains in operation. Cartridge (cylindrical) type filters

have pleated, non-woven filter media supported on a perforated metal cartridge. Due to its pleated design, total filtering area is greater than in a conventional bag of the same diameter, resulting in reduced air-to-cloth ratio, pressure drop, and overall collector size. Too heavily loaded cartridges can either be cleaned by a pulse jet compressed air or replaced with new cartridges. Cartridge type filters have high particle collection efficiency of, at a minimum, 99.9 percent, and are usually used for industrial process handing exhaust gas flow rates less than 50,000 cubic feet per minute (cfm).

The National Fire Protection Association has special designations for deflagrations (e.g., explosion prevention) from metal dust. Therefore, operators of metal grinding activities that require baghouse emission control technologies will also need to select reliable, economical and effective means of explosion control such as baghouse explosion suppression, containment and venting. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design* 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

High Efficiency Particulate Arrestor (HEPA) Filters

HEPA filters are capable of capturing fine PM as small as 0.3 micron (µm) diameter or larger. HEPA filters have a minimum efficiency rating of 99.97% which means that they have a high collection efficiency when compared to other PM control devices. HEPA filters are best utilized in situations when a high collection efficiency of submicron PM is necessary, when toxic and or hazardous PM cannot be cleaned from the filter, or when the filter is difficult to clean. Unlike bags or cartridge filters in baghouses, HEPA filters are not automatically cleaned. When a HEPA filter element becomes loaded with PM, the filter element is replaced and the loaded filter is disposed of as hazardous waste.

A HEPA filter is generally installed as the final component in a PM collection system downstream from other PM collection devices. The use of a HEPA filter requires a pre-filter upstream to remove large PM for dust concentrations greater that 0.03 grams per square centimeter (g/cm^2) or 0.06 pounds per square feet squared (lbs/ft^2). In metal grinding applications at forging facilities, a mechanical collector such as a cyclone can be used as a pre-filter to be followed by a standard baghouse or cartridge filters in order to reduce larger diameter PM prior to venting emissions to a HEPA filter.

Cyclone

A cyclone is typically used as a pre-filter or pre-cleaner and is located upstream of a baghouse or HEPA filter to capture the largest particles. A cyclone is not equipped with its own blower to draw in the PM laden exhaust stream. Instead, particles are forced to move toward the cyclone walls by the centrifugal force of the spinning exhaust causing the large particles to be removed by inertia. Since small particles may be too small to be captured in a cyclone, secondary air pollution control such as a baghouse or HEPA filter are used to capture PM that escapes from the cyclone.

PROJECT DESCRIPTION

The purpose of PR 1430 is to reduce PM, toxic emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. As previously explained, metal grinding and metal cutting operations are currently exempt from SCAQMD permits and are unregulated

emissions sources. PR 1430 establishes standards for metal grinding and cutting options for both point sources and fugitive emission sources. Point sources are addressed through requirements for emission control devices, emission standards, and periodic monitoring. Fugitive PM emissions are addressed through requirements for total enclosures, housekeeping, and maintenance and repair activities. Additionally, signage, reporting, and recordkeeping requirements are also being proposed to ensure compliance. The following is a detailed summary of the key elements contained in PR 1430. A copy of PR 1430 can be found in Appendix A.

Purpose – subdivision (a)

Subdivision (a) establishes the purpose of PR 1430 which is to reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities.

Applicability – subdivision (b)

Subdivision (b) explains that PR 1430 applies to metal forging facilities that conduct metal grinding or cutting operations onsite. Subdivision (b) also clarifies that PR 1430 does not apply to metal grinding or cutting operations that are conducted under a continuous flood of metal removal fluid, or grinding activities conducted to maintain or repair equipment at a facility.

Definitions – subdivision (c)

Subdivision (c) includes definitions of the following terms: Bag Leak Detection System; Billet; Billet Grinding; Building; Capture Velocity; Confirmed Odor Complaint; Duct Section; Effective Zone; Emission Collection System; Emission Control Device; Fugitive Metal Dust; Hand Grinding; HEPA; Maintenance and Repair Activity; Metal; Metal Cutting; Metal Forging Facility; ~~Metal Grinding~~; Metal Grinding Operation; Metal Removal Fluid; ~~School; Sensitive Receptor;~~ Small ~~Hand~~Part Grinding; Stand Grinding; Swing Grinding; Temporary Enclosure; Torch Cutting; and, Total Enclosure.

Total Enclosures – subdivision (d)

Paragraph (d)(1) prohibits metal grinding or metal cutting operations, or small hand grinding activities from occurring outside of a temporary enclosure, building, or total enclosure.

Paragraph (d)(2) allows metal grinding or metal cutting operations that occur inside a building and exist at the time PR 1430 is adopted to continue to operate until ~~the requirements in paragraph (d)(3) are met~~a total enclosure is completed.

Subp~~P~~aragraph (d)(~~3~~2)(A) requires existing metal grinding or metal cutting operations that occur inside a building to conduct these operations in a total enclosure within six months of rule adoption. Subp~~P~~aragraph (d)(2)(B) requires existing metal grinding or metal cutting operations that occur inside a temporary enclosure or building to conduct these operations in a total enclosure within 12 months of rule adoption, provided the owner or operator provides written notice to the Executive Officer within 60 days after [Date of Rule Adoption] that a new total enclosure will be constructed.

In addition, paragraph (d)(~~3~~2) also requires an owner or operator to minimize fugitive metal dust emissions from passages, doorways, and bay doors by installing automatic roll-up doors, plastic strip curtains, or vestibules for doors and openings in the total enclosure. This paragraph also allows for alternative methods to minimize the release of fugitive metal dust from the total enclosure provided that the owner or operator can demonstrate to the Executive Officer an equivalent or more effective method can be applied.

~~Paragraph (d)(4) requires metal grinding or metal cutting operations that do not currently occur inside a building to conduct these operations in a total enclosure within 12 months of rule adoption. In addition, p~~Paragraph (d)(43) ~~also~~ allows the use of a temporary enclosure or building until a total enclosure is completed provided that cleanings by wet cleaning or HEPA vacuum after or at the end of each operating shift are conducted.

Paragraph (d)(~~5~~4) requires all types of enclosures to be designed in a manner that does not conflict with requirements set forth by the federal Occupational Safety and Health Administration (OSHA) or the California Division of Occupational Safety and Health (CAL-OSHA) regarding worker safety.

Paragraph (d)(~~6~~45) requires inspections of any temporary enclosure or total enclosure at least once a calendar month for breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust.

Paragraph (d)(6) requires that metal grinding or metal cutting operations be immediately stopped if inspection of a total enclosure where these operations are conducted reveals a break, crack, gap or deterioration which results in fugitive metal dust. The metal grinding or metal cutting operation may resume until the total enclosure is repaired pursuant to paragraph (d)(7) if the owner or operator implements temporary measures to ensure that no fugitive metal dust results from the break, crack, gap or deterioration.

Paragraph (d)(7) requires any breaks, cracks, gaps, or deterioration from any ~~temporary enclosure or~~ total enclosure to be repaired within 72 hours of discovery. An owner or operator may request an extension beyond the 72-hour limit if the request is submitted before the 72-hour time limit has expired, and the owner or operator must provide information to substantiate that the repair will take longer than 72 hours or that the equipment, parts or materials needed for the repair cannot be obtained within 72 hours.

Paragraph (d)(8) requires existing metal grinding or metal cutting operations that occur inside a total enclosure that is located within ~~3~~500 feet of any ~~sensitive receptor~~ residence or 1,000 feet of any public or private school to vent the total enclosure to air pollution control equipment in accordance with negative air specifications within six months of receiving a Permit to Construct from SCAQMD for the air pollution control equipment. Residences include private homes, condominiums, apartments, and living quarters; daycare centers; health care facilities such as hospitals or retirement and nursing homes; long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing. Public or private school includes juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including kindergarten and grades 1 through 12, inclusive; and early head start schools, head start schools, and preschools. This provision does apply to any private school in which education is primarily conducted in private homes.

Metal Grinding and Cutting Emission Requirements – subdivision (e)

Paragraph (e)(1) requires emissions from all metal grinding and metal cutting operations to be vented to an air pollution control device no later than 6 months after a SCAQMD Permit to Construct is issued for the air pollution control device. Paragraph (e)(1) also establishes a PM outlet concentration of ~~0.01~~ 0.002 grains of particulate matter per dry standard cubic foot (dscf) for the air pollution control device as determined by a source test. ~~SCAQMD staff is considering a PM outlet concentration of 0.002 grains of particulate matter per dry standard cubic foot, which~~

~~would be more representative of the emission rate after fitting the control device with HEPA filters as required by paragraph (e)(2) as discussed below.~~

Paragraph (e)(2) requires an air pollution control device to be fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 µm particles, and designed in a manner that does not conflict with requirements or guidelines set forth by the OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

Paragraph (e)(3) allows the use of alternative filter media rated by the manufacturer to achieve a minimum of 98% control efficiency for 0.3 µm particles provided that: 1) billet grinding, metal cutting, swing grinding, or torch cutting is not conducted; 2) a combination of 10 or fewer hand grinding units or stand grinding stations are operated; and, 3) the toxic emissions from the air pollution control device does not exceed the screening levels identified in Table I – Toxic Air Contaminants in Rule 1401 - New Source Review of Toxic Air Contaminants, or does not result in a cancer risk of over one in a million.

Paragraph (e)(4) requires the air pollution control device to be operated at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists.

Paragraph (e)(5) requires that within 30 days of rule adoption, permanent visual indicators or markings at all hand grinding, stand grinding, swing grinding, and torch cutting stations be added that identify the maximum distance metal grinding may occur from the air pollution control device to ensure the emission collection system meets the requirements of subdivision (e). Paragraph (e)(5) also requires all metal grinding activity to be conducted in front of the hood face and within the designated maximum distance metal area without obstructing the air flow between the metal grinding operation and the hood for the emission collection system.

Paragraph (e)(6) requires either the removal of any weather cap from any stack that is a source of metal PM emissions or the installation of a butterfly valve on the stack no later than 30 days after rule adoption.

Housekeeping Requirements – subdivision (f)

Subdivision (f) requires housekeeping practices to be implemented no later than 30 days after rule adoption.

Paragraph (f)(1) requires semi-annual wet cleaning or HEPA vacuuming to be conducted, no more than six calendar months apart, on roof tops for total enclosures that house areas associated with metal grinding or metal cutting operations. ~~Paragraph (f)(1) does not apply to areas associated with the storage of raw, unprocessed metal containing materials, finished metal containing products, storage of metal grinding waste, and non-metal grinding or metal cutting activities.~~

Paragraph (f)(2) requires daily wet cleaning or HEPA vacuuming in specified areas where metal grinding, metal cutting, or small hand grinding is conducted.

Paragraph (f)(3) requires the following housekeeping measures to be conducted: 1) monthly wet cleaning or HEPA vacuuming of floors of a temporary enclosure, building or total enclosure areas where metal grinding or metal cutting operations occur; and, 2) the storage in sealed containers of

all fugitive metal dust producing materials such as metal containing waste generated from conducting housekeeping and maintenance and repair activities, unless located within a total enclosure. Paragraph (f)(3) also prohibits conducting compressed air cleaning operations or dry sweeping within 30 feet of any metal cutting or metal grinding operation, unless the compressed air cleaning operation or dry sweeping is vented to an air pollution control device.

Maintenance and Repair Activity Requirements – subdivision (g)

On and after 30 days after rule adoption, subdivision (g) requires the following requirements when certain maintenance and repair activities are conducted. PR 1430 defines maintenance and repair activities as those that are conducted outside of a total enclosure that generates or has the potential to generate fugitive metal dust during maintenance or repair activities on any emission control device that vents metal grinding or cutting operations; or replacement or removal of any duct section used to vent metal grinding or cutting operations.

Paragraph (g)(1) requires the floors located within 20 feet of where the maintenance or repair activity occurred to be wet cleaned or HEPA vacuumed within one hour after completion of the maintenance or repair activity.

Paragraph (g)(2) requires maintenance and repair activities that are not conducted within a building, temporary enclosure, ~~or total enclosure~~ to be stopped immediately when instantaneous wind speeds are greater than or equal to 20 miles per hour (mph).

Paragraph (g)(3) requires all metal-contaminated equipment and materials used for maintenance and repair activities to be wet cleaned or HEPA vacuumed immediately after completion of work in a manner that does not generate fugitive metal dust.

Source Tests – subdivision (h)

Paragraph (h)(1) requires the following source tests for any emission control device venting metal grinding or metal cutting operations: 1) a source test for PM emissions once every 12 months to demonstrate compliance with the emission standard and capture velocity requirements in subdivision (e) unless the source test demonstrates no more than 50% of the PM emissions standard then the source test may be performed no later than 24 months after the date of the most recent test; ~~and,~~ 2) a source test for hexavalent chromium and multiple metal emissions once every 48 months~~.~~; and , 3) the owner or operator of a metal forging facility is exempt from a source test for hexavalent chromium if a metals analysis by X-ray fluorescence (XRF) of bulk samples from the baghouse catch demonstrates a total chromium concentration of no greater than 1% by weight. The metals analysis by XRF is required to be conducted upon each removal or disposal of the baghouse catch. A metals analysis by XRF that demonstrates a total chromium greater than 1% by weight would require the owner or operator to conduct a hexavalent chromium source test for the associated baghouse within 60 days of the XRF analysis with subsequent source tests conducted every 48 months.

Paragraph (h)(2) requires a source test protocol to demonstrate compliance with the requirements in paragraph (h)(1) to be submitted no later than 60 days after rule adoption for the initial source test and no later than 90 days prior to the compliance deadline for subsequent source tests. Paragraph (h)(2) allows the use of the initial source test protocol for subsequent source tests if there are no changes.

Paragraph (h)(3) requires a source test protocol to demonstrate compliance with paragraph (h)(1) no later than 30 days after initial start-up of a new or modified metal grinding or metal cutting

emission control device that occurs on or after the date of rule adoption and no later than 90 days prior to the compliance deadline for subsequent source tests. Paragraph (h)(3) allows the use of the initial source test protocol for subsequent source tests if there are no changes.

Paragraph (h)(4) requires the source test protocol to include the source test criteria, all assumptions, required data, and calculated targets for testing the following: 1) target particulate mass emission standard; 2) preliminary target pollutant analytical data; 3) planned sampling parameters; and, 4) information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.

Paragraph (h)(5) requires source tests specified in paragraph (h)(1) to be conducted for an emission control device no later than 60 days from approval of the source test protocol, unless otherwise approved in writing by the Executive Officer.

Paragraph (h)(6) requires that if the pressure across the HEPA filter is not maintained pursuant to paragraph (i)(4) then a source test for the emissions control device that triggered the monitored pressure change must be performed within 60 days. A source test must be conducted for the following: PM emissions, multiple metals, and hexavalent chromium unless the facility conducts a metals analysis with XRF that demonstrates all bulk samples from the baghouse catch are no greater than a concentration of 1% by weight for total chromium.

Paragraph (h)(~~6~~7) requires the owner or operator to provide written notification within 10 calendar days prior to conducting any source test.

Paragraph (h)(~~7~~8) requires the owner or operator to provide notification by calling 1-800-CUT-SMOG within three business days (Monday through Friday) of when the facility knew or should have known of any source test result that exceeds the emission standard. Paragraph (h)(7) also requires the owner or operator to provide written notification containing the source test results within seven business days of the initial notification by phone.

Paragraph (h)(~~8~~9) establishes the applicable test methods that may be used when conducting a source test during typical operating conditions.

Paragraph (h)(~~9~~10) allows the use of alternative or equivalent test methods as defined in 40 CFR 60.2 when conducting a source test during typical operating conditions provided that written approval is granted by the SCAQMD's Executive Officer, in addition to the California Air Resources Board (CARB), or the U.S. EPA, as applicable.

Paragraph (h)(~~10~~11) requires the use of an approved test laboratory pursuant to the SCAQMD Laboratory Approval Program. Paragraph (h)(10) also allows the use of a non-approved test laboratory if granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.

Paragraph (h)(~~11~~12) requires a specific set of test conditions to be applied, which are subject to approval by the Executive Officer, when more than one source test method or set of source test methods are specified for any testing. Paragraph (h)(11) defines a violation of Rule 1430 to occur if the results of any one of the specified source test methods or set of source test methods demonstrate an exceedance of an emission standard.

Paragraph (h)(~~12~~13) requires testing to be performed according to the most recent SCAQMD-approved test protocol for the same purpose or compounds regardless of whether the testing is conducted by the facility, by SCAQMD, or by a contractor acting on behalf of SCAQMD or the facility to determine compliance.

Paragraph (h)(~~13~~14) requires source test reports to be submitted to SCAQMD in 60 days or less after source testing has been completed.

Paragraph (h)(~~14~~15) allows for an extension of the compliance deadline date for conducting source tests as specified in paragraph (h)(1) provided that the facility can demonstrate that a complete source test protocol and associated information was provided according to the required timeline, and is unable to meet the deadline due to reasons beyond the facility's control. Paragraph (h)(~~14~~15) also requires a request for extension to be submitted to the Executive Officer for approval no later than 30 days before the compliance deadline date.

Monitoring – subdivision (i)

Paragraph (i)(1) requires the installation, operation, calibration and maintenance of a BLDS pursuant to SCAQMD Rule 1155 – Particulate Matter (PM) Control Devices.

Paragraph (i)(2) requires the minimum hood induced capture velocity to be measured by static pressure once per operating shift using the measurement procedures specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Operation and Maintenance,* published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with SCAQMD, or any more stringent methods required by OSHA or CAL-OSHA.

Paragraph (i)(3) requires continuous monitoring of the pressure drop across the HEPA filter of an emission control device with a mechanical gauge positioned so that it is easily visible and in clear sight of the operator or maintenance personnel. Paragraph (i)(3) also establishes requirements for the continuous monitoring device. Paragraph (i)(~~3~~4) ~~also~~ requires the pressure drop across the HEPA filter to be maintained within -1/2 times to +2 times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitation for the emission control device based on hourly recordings by the continuous monitoring device for the averaging periods specified in subparagraphs (i)(5)(A) and (i)(5)(B).

Paragraph (i)(~~4~~5) requires confirmation of the capture velocity and a periodic smoke test to be conducted at least once every three months using the procedure set forth in Appendix 1 of Rule 1430 for each emission collection system, unless performing such test presents an unreasonable risk to safety.

Recordkeeping – subdivision (j)

Paragraph (j)(1) requires the following monthly records to be kept indicating: ~~1) the weight of metal processed by the facility; 2~~1) the weight of metal waste collected by the baghouse catch, including, if applicable any metal analyses for bulk samples of baghouse catches conducted for XRF analyses; and, ~~3~~2) the weight of metal waste collected by housekeeping activities. Paragraph (j)(1) also requires the following records to be kept indicating: 1) the dates when bags for baghouses, cartridges, or HEPA filters are replaced; 2) periodic smoke tests; 3) emission control device inspection and maintenance; 4) housekeeping activities; 5) maintenance and repair activities including the name of the person performing the activity, and the dates and times at which specific activities were completed; and, 6) a log of reports to the facility regarding odors or

other air quality related issues that includes the date, time, name and contact information for the person reporting the issue, source of the issue, ~~and~~ how the issue was resolved, and how it would be avoided in the future.

Paragraph (j)(2) requires records to be kept for BLDS ~~pursuant to SCAQMD Rule 1155~~.

Paragraph (j)(3) requires all records to be maintained for five years, ~~with at least the two most recent years kept onsite~~ and shall be made available to SCAQMD personnel upon request with at least the two most recent years kept onsite.

Signage – subdivision (k)

Paragraph (k)(1) requires the installation of a sign, measuring 16 square feet with lettering at least three inches tall with text contrasting with the sign background, within 50 feet of each entrance of the facility that is visible to the public, and in a location on each side of the facility that is visible to the public, that states the following: "TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST OR SMOKE FROM THIS FACILITY, CALL EITHER ~~[*FACILITY CONTACT PHONE NUMBER*] OR~~ THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG."

Permit Application Submittals for Existing Metal Grinding or Cutting Operations – subdivision (l)

Subdivision (l) requires permit applications to be submitted no later than 60 days after rule adoption for all construction and/or necessary equipment required by paragraphs (d)(8) – Total Enclosures with Negative Air and (e)(1) – Emission Control Devices, for existing metal grinding or metal cutting operations, and Bag Leak Detection Systems.

Odor Contingency Measures (m)

Paragraph (m)(1) requires the owner or operator of a metal forging facility that has been notified by the Executive Officer of four (4) confirmed odor complaints in any consecutive six (6) months to implement an odor reducing measure(s) from the list specified in subparagraphs (m)(1)(A) through (m)(1)(D) of the proposed rule. Odor reducing measures include: 1) operational changes, 2) process changes, 3) enhancements to enclosures, and 4) other types of modifications approved by the Executive Officer.

Paragraph (m)(2) requires odor reducing measures to be implemented within a specific time period from the date the owner or operator is notified by the Executive Officer of four (4) confirmed odor complaints. The time period implement odor reducing measures are as follows: 60-days for measures related to operational or process changes, 90 days for measures related to enhancements to enclosures and on a schedule approved by the Executive Officer for measures that require Executive Officer approval. Paragraph (d)(3) requires the owner or operator to notify the Executive Officer within 30 days after implementing a measure required under paragraph (m)(1).

Paragraph (m)(4) requires that the consecutive 6-month period referenced in paragraph (m)(1) is restarted upon implementation of an odor reducing measure selected to comply with subparagraphs (m)(1)(A) through (m)(1)(D).

Rule 219 Exemption – subdivision (~~m~~n)

Subdivision (~~m~~n) clarifies that as of the date of rule adoption, any equipment subject to the requirements of Rule 1430 for metal grinding or metal cutting operations and associated emission

control devices will no longer be exempt from the requirement of a written permit pursuant to SCAQMD Rule 219 – Equipment Not Requiring A Written Permit Pursuant to Regulation II.

Appendix 1 - Smoke Test to Demonstrate Capture Efficiency for Ventilation Systems of (an) Emission Control Device(s) Pursuant to Paragraph (i)(4)

Appendix 1 contains procedures for conducting a smoke test of point sources where an emission control device is used to capture and control emissions from metal grinding or metal cutting operations.

CHAPTER 2

ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	~~Draft~~ Final Environmental Assessment for Proposed Rule (PR) 1430 – Control of Emissions From Metal Grinding Operations at Metal Forging Facilities
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. Sam Wang (909) 396-2649
PR 1430 Contact Person	Mr. Eugene Kang (909) 396-3524
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:	SCAQMD staff is proposing a new rule, Rule 1430 to reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities located in industrial, commercial, or mixed land use areas throughout the entire SCAQMD jurisdiction. PR 1430 does not apply to grinding or cutting operations that are conducted under a continuous flood of metal removal fluid. PR 1430 would require owners or operators of the affected facilities to: 1) construct total enclosures; 2) modify existing or install new air pollution control devices; 3) install a BLDS (as applicable); 4) implement housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming; 5) conduct source testing and monitoring to assure compliance; and, 6) conduct recordkeeping. Some facilities that may be affected by PR 1430 are identified on lists compiled by the California Department of Toxic Substances Control per California Government Code §65962.5. While the reduction of toxic emissions, PM emissions, and odors will be expected to create an environmental benefit, activities that facility operators may undertake to comply with PR 1430 may also create secondary adverse environmental impacts from the construction and operation activities primarily associated with building total enclosures and with installing new or

	modifying existing air pollution control equipment. However, analysis of the proposed project in the ~~Draft~~Final EA did not result in the identification of any environmental topic areas that would be significantly adversely affected by the proposed project.
Surrounding Land Uses and Setting:	Residential, Commercial, Industrial and Mixed Use
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas 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 "✓"involve at least one impact that is a "Potentially Significant Impact". An explanation relative to the determination of impacts can be found following the checklist for each area.

☐ Aesthetics	☐ Geology and Soils	☐ Population and Housing
☐ Agriculture and Forestry Resources	☐ Hazards and Hazardous Materials	☐ Public Services
☐ Air Quality and Greenhouse Gas Emissions	☐ Hydrology and Water Quality	☐ Recreation
☐ Biological Resources	☐ Land Use and Planning	☐ Solid and Hazardous Waste
☐ Cultural Resources	☐ Mineral Resources	☐ Transportation and Traffic
☐ Energy	☐ Noise	☐ Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

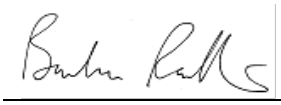
☑ I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.

☐ 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. An 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 an 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. An 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: 1) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards; and, 2) 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 10, 2017 **Signature:** 

Barbara Radlein
Program Supervisor, CEQA Special Projects
Planning, Rules, and Area Sources

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As discussed in Chapter 1, the main focus of PR 1430 is to reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. PR 1430 has been evaluated relative to the environmental topics identified in the following environmental checklist (e.g., aesthetics, agricultural and forestry resources, biological resources, etc.). Several requirements in PR 1430 would not be expected to cause any physical changes that that could have secondary adverse environmental effects. For example, activities such as conducting monitoring of the emission collection system, record keeping, posting signage and applying for permit applications, and filing source test protocols are administrative or procedural in nature and would not be expected to create any secondary adverse environmental effects. However, there are activities that facility operators may undertake to comply with PR 1430 and these activities may also create secondary adverse environmental impacts. For example, PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, and the installation of a BLDS (as applicable). In addition, operational activities such as conducting source testing, and implementing housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming may also contribute to secondary adverse environmental impacts. Thus, the analysis in this EA focuses on the potential secondary adverse environmental impacts from these activities. To evaluate these impacts, the following assumptions were relied upon in the foregoing analyses:

Of the 22 metal forging facilities that will be subject to PR 1430:

- 5 are assumed to construct new buildings/enclosures and install new air pollution control equipment (11 baghouses with HEPA filters). While 2 of these facilities have existing air pollution control equipment, the analysis conservatively assumes that the existing air pollution control equipment will be demolished and replaced with new air pollution control equipment (4 baghouses without HEPA filters).
- ~~2~~ 3 facilities are assumed to construct one wall (in order to attain a complete enclosure) and 2 facilities are expected to install new air pollution control equipment (2 baghouses without HEPA filters).
- ~~12~~ 9 facilities are assumed to ~~to~~ install new air pollution control equipment (12 baghouses with HEPA filters and ~~3~~ 1 baghouse~~s~~ without HEPA filters).
- All of the facilities are assumed to meet the requirement for total enclosures by one year after PR 1430 is adopted.
- 5 facilities are assumed to not need any additional air pollution control equipment or building construction to meet the total enclosure requirement but instead, would make minor improvements to their buildings.
- ~~7~~ 11 facilities are assumed to be operated under negative air conditions and ~~6~~ 10 of these facilities are assumed to need new or upgraded ventilation systems for air pollution control equipment, in order to properly ventilate the total enclosures and achieve negative air conditions.
- All of the air pollution control equipment installed or modified will require maintenance which will involve collection and recycling or disposal of collected PM, periodic bag replacement for baghouses, periodic HEPA filter replacement for systems equipped with HEPA filters and the associated delivery and haul trips.

- All of the air pollution control equipment installed or modified will require periodic source testing which will have associated worker trips to visit each facility to conduct the source tests.
- All of the housekeeping activities could require the use of some water to conduct periodic cleaning.

Subsequent to the release of the Draft EA for public review and comment, additional revisions were made to PR 1430 that are described in the Project Description section in Chapter 1. These revisions resulted in adjustments to the number of facilities and the types of modifications that may be made to the affected facilities as indicated in strikeout/underlined text above. Nonetheless, staff has reviewed these modifications and concluded that overall, no new impacts are anticipated to result from these modifications. Further, the impacts previously evaluated in the Draft EA would not be made substantially worse and the conclusions reached in the Draft EA remained unchanged in the Final EA with respect to the currently version of PR 1430. Thus, staff has concluded that none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the Draft EA. In addition, revisions to PR 1430 in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

I. a), b) & c) No Impact. To reduce toxic emissions and PM emissions from the affected facilities, older, less efficient air pollution control equipment may need to be replaced with newer, cleaner, more efficient air pollution control equipment or in some cases, new air pollution control equipment such as baghouses and/or HEPA filters will need to be installed. In addition, some facilities may need to build new enclosures or remodel existing enclosures.

Due to the large size profiles of the air pollution control equipment that may need to modified or installed and the enclosures that may need to be modified or built, construction will be needed to carry out these activities, which will require the use of heavy-duty construction equipment such as

cranes, tractor/loader/backhoes, and forklifts, et cetera. The use of cranes, in particular, because of their height when fully extended, may be visible to the surrounding areas and temporarily change the skyline of the affected facilities, depending on where they are located within each facility's property. Except for the use of cranes, the majority of the construction equipment is expected to be low in height and not substantially visible to the surrounding area due to existing fencing along the property lines and existing structures currently within the facilities that may buffer the views of the construction activities.

Because each affected facility is located in existing industrial, commercial or mixed land use areas, the construction equipment is not expected to be substantially discernable from what exists on-site for routine operations and maintenance activities. Further, the construction activities are not expected to adversely impact views and aesthetics resources since most of the heavy equipment and activities are expected to occur within the confines of each existing facility and are expected to introduce only minor visual changes to areas outside each facility, if at all, depending on the location of the construction activities within the facility.

Lastly, the construction activities are expected to be temporary in nature and will cease following completion of the installation of new or modifications to existing buildings and air pollution control equipment. Once construction of any new or modified buildings or air pollution control equipment is completed, all construction equipment will be removed from each facility. These new or modified air pollution control devices would be expected to blend in with the existing industrial profile at the affected facilities because the heights of these units are typically smaller when compared to neighboring existing equipment onsite and their associated stack heights would be about the same or shorter than existing stacks within the affected facilities.

PR 1430 also contains requirements for facility owners or operators to conduct periodic housekeeping and maintenance activities, such as wet cleaning, vacuuming, and make modifications to the air ventilation system so that the air pollution control equipment can operate under negative air pressure conditions. These low-profile activities are limited to each facility's property such that they are not expected to affect any scenic vistas. For facilities that are required to have a BLDS, the installation consists of placing probes within the baghouse system so these modifications are expected to blend in with the existing equipment. In addition, PR 1430 imposes limits on PM concentration levels and strengthens existing visible emission requirements. To that extent, toxic and PM emission reductions are achieved through PR 1430, and, thus, improvements in visibility would also be expected to occur once all of the metal grinding and metal cutting activities are relocated inside an enclosure. Better visibility will be expected to improve the existing visual character or quality of areas in the vicinity of affected sites.

Therefore, any potential construction and operation of new and modified existing equipment or buildings as a result of the proposed project would not be expected to damage, degrade, or obstruct scenic resources and the existing visual character of any site in the vicinity of affected facilities.

I. d). No Impact. There are no components in PR 1430 that would require construction activities to occur at night. Further, cities often have their own limitations and prohibitions that restrict construction from occurring during evening hours and weekends. Therefore, no additional temporary construction lighting at the facility would be expected. Similarly, while the proposed project has no provisions that would require affected equipment to operate at night, some facilities currently operate multiple shifts and existing lighting is utilized during the nighttime shifts. For those facilities that are projected to modify existing or construct new buildings or air pollution

control equipment, once construction is complete, additional permanent light fixtures may be installed on or near the new or modified structures for safety and security reasons. These permanent light fixtures would be positioned to direct light downward toward equipment within the facility so as to not create additional light or glare offsite to residences or sensitive receptors. Therefore, the proposed project is not expected to create a new source of substantial light or glare at any of the affected facilities in a manner that would adversely affect day or nighttime views in the surrounding areas.

Conclusion

Based upon these considerations, significant adverse aesthetics impacts are not expected from implementing PR 1430. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
II.	**AGRICULTURE AND FORESTRY RESOURCES.** 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?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
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))?	☐	☐	☐	☑
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

II. a), b), c), & d) No Impact. The affected facilities and their immediately surrounding 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 both construction and operation activities that would occur as a result of implementing the proposed project would occur within the existing boundaries of each affected facility, there are no provisions in PR 1430 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.

All of the facilities are located in existing industrial, commercial or mixed land use areas in the urban portion of the Basin 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 PR 1430 would not require the installation or modification of buildings or equipment to occur 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 PR 1430 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.

Conclusion

Based upon these considerations, significant adverse agricultural and forest resources impacts are not expected from implementing PR 1430. Since no significant agriculture and forest resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☑
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☑	☐
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)?	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑	☐
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Significance Criteria

To determine whether or not air quality and greenhouse gas impacts from implementing PR 1430 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. PR 1430 will be considered to have significant adverse impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

Table 2-1
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction** [b]	**Operation** [c]
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO_2eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants [d]		
NO_2 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)	
PM_{10} 24-hour average annual average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation) 1.0 μg/m^3	
$PM_{2.5}$ 24-hour average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation)	
SO_2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 μg/m^3 (state)	
CO 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)	
Lead 30-day Average Rolling 3-month average	1.5 μg/m^3 (state) 0.15 μg/m^3 (federal)	

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million μg/m^3 = microgram per cubic meter ≥ = greater than or equal to
MT/yr CO_2eq = metric tons per year of CO_2 equivalents > = greater than

Revision: March 2015

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

III. a) No Impact. 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, the SCAQMD is also required to attain the state and federal ambient air quality standards for all criteria pollutants.

The 2012 AQMP was adopted by the SCAQMD Governing Board on December 7, 2012. In addition, 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)[6] 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.

The most recent regional blueprint for how the SCAQMD will achieve air quality standards and healthful air is outlined the Draft Final 2016 AQMP[7] which contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases, and toxics. At the time of this publication, the 2016 AQMP is scheduled for consideration by the SCAQMD Governing Board on February 3, 2017. In particular to toxics emissions, more information has become available about metal forging facilities with metal grinding and cutting operations indicating that more controls are needed to address fugitive toxic PM emissions, especially metal PM. Since heavy metals, such as nickel, cadmium, hexavalent chrome, cobalt and metal PM have high relative risks compared to other toxics and can create health problems from ingestion, dermal exposure, and through consumption of breast-milk, the Draft Final 2016 AQMP contains SCAQMD's air toxics control strategy TXM-01 - Control of Metal Particulate from Metal Grinding Operation, to specifically address reducing metal PM emissions from metal grinding activities at metal forging facilities, metal foundries, and plating operations.

PR 1430 was developed to partially implement TXM-01, by reducing toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities. Both metal grinding and metal cutting operations are currently exempt from SCAQMD permits,

[6] SCAQMD Air Toxics Control Plan, http://www.aqmd.gov/home/library/clean-air-plans/clean-communities-plan/air-toxics-control-plan.

[7] SCAQMD, Draft Final 2016 Air Quality Management Plan, http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draft-final-aqmp/clean/2016finaldraftaqmpdec2016(clean).pdf.

and as such operations are currently an unregulated source category. Although some of the metal grinding and metal cutting operations have air pollution controls, most are not permitted. PR 1430 will ensure that metal particulate emissions are appropriately vented to air pollution control equipment, fugitive emissions are contained within a building enclosure, and housekeeping measures are implemented to further minimize emissions from metal grinding and metal cutting operations at metal forging facilities. Upon implementation, PR 1430 would be expected to reduce health risks and minimize public nuisance and odors affecting neighboring businesses and residents.

For these reasons, PR 1430 would not obstruct or conflict with the implementation of the 2012 AQMP or the Draft Final 2016 AQMP because the emission reductions from implementing PR 1430 are in addition to emission reductions in the 2012 AQMP and are in accordance with the emission reduction goals in the Draft Final 2016 AQMP. Additionally, PR 1430 does not include any provisions which would conflict with the attainment of ozone and PM standards in either the 2012 AQMP or the Draft Final 2016 AQMP.

PR 1430 would reduce toxic and PM emissions and therefore, be consistent with the goals of the 2012 AQMP, the 2010 CCP, and the Draft Final 2016 AQMP. Therefore, implementing PR 1430 to reduce toxic and PM emissions from metal grinding and metal cutting operations at metal forging facilities would not conflict with or obstruct implementation of the applicable air quality plans. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. b) and f) Less Than Significant Impact. For a discussion of these items, refer to the following analysis.

New Facilities

SCAQMD staff is not aware of any new metal forging facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Therefore, in accordance with CEQA Guidelines §15145, an evaluation of construction and operation impacts for new facilities is concluded to be speculative and will not be evaluated further in this analysis. The focus of the analysis will be on the 22 existing facilities as explained in the following discussion.

Existing Facilities

The primary source of air quality construction impacts would be from PR 1430's key requirements to construct total enclosures, remove existing air pollution control devices (as applicable) and install new air pollution control devices and associated ventilation systems as needed, and install BLDS (as applicable). Similarly, the primary source of air quality impacts during operation would be from the requirements to conduct source testing and implement housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming. Thus, the analysis focuses on the potential secondary adverse environmental impacts from these activities during construction and operation.

Table 2-2 summarizes the key requirements in PR 1430 that may create secondary adverse air quality and GHG impacts during construction and operation.

Table 2-2
Sources of Potential Secondary Adverse Air Quality and GHG Impacts During Construction and Operation

Key Requirements in PR 1430	Physical Actions Anticipated During:	
	Construction	**Operation**
Total Enclosures	1. Install total enclosure and make building improvements 2. Install ventilation system to achieve negative air conditions	1. New total enclosure building operation 2. Ventilation system operation using blowers to achieve negative air conditions
Point Source Emission Controls	Air pollution control equipment replacement and/or installation	1. Air pollution control equipment operation 2. Vehicle trips due to filter replacement and waste disposal 3. Collection and recycling or disposal of collected PM 4. Leak detection
Housekeeping Requirements	None needed	1. Vehicle trips due to hauling waste and delivering supplies 2. Cleaning equipment
Source Testing	None needed	Vehicle trips due to periodic source testing

For the purpose of the conducting a worst-case CEQA analysis, for the 22 metal forging facilities that will be subject to PR 1430, the following assumptions[8] have been made:

- 5 facilities are assumed to construct new buildings/enclosures and install new air pollution control equipment (11 baghouses with HEPA filters). While 2 of these facilities have existing air pollution control equipment, the analysis conservatively assumes that the existing air pollution control equipment will be demolished and replaced with new air pollution control equipment (4 baghouses without HEPA filters).
- ~~2~~ 3 facilities are assumed to construct one wall (in order to attain a complete enclosure) and 2 facilities are expected to install new air pollution control equipment (2 baghouses without HEPA filters).
- ~~12~~ 9 facilities are assumed to install new air pollution control equipment (12 baghouses with HEPA filters and ~~3~~ 1 baghouses without HEPA filters).
- All of the facilities are assumed to meet the requirement for total enclosures by one year after PR 1430 is adopted.

[8] SCAQMD staff evaluated the 22 affected facilities and compiled information and data specific to the air pollution control equipment, total enclosures, ventilations systems to create negative air conditions, and the new buildings. This information and data were used to develop the assumptions applied in this CEQA analysis.

- 5 facilities are assumed to not need any additional air pollution control equipment or building construction to meet the total enclosure requirement but instead, would make minor improvements to their buildings.
- ~~7~~ 11 facilities are assumed to be operated under negative air conditions and ~~6~~ 10 of these facilities are assumed to need new or upgraded ventilation systems for their air pollution control equipment, in order to properly ventilate the total enclosures and achieve negative air conditions.
- All of the air pollution control equipment installed or modified will require maintenance which will involve collection and recycling or disposal of collected PM, periodic bag replacement for baghouses, periodic HEPA filter replacement for systems equipped with HEPA filters and the associated delivery and haul trips.
- All of the air pollution control equipment installed or modified will require periodic source testing which will have associated worker trips to visit each facility to conduct the source tests.
- All of the housekeeping activities could require the use of some water to conduct periodic cleaning.

Construction Impacts

Construction emissions were estimated according to the following construction phases: demolition of an existing building, air pollution control equipment, and its foundation; site grading; and, construction of a new building or improve an existing building to meet the total enclosure requirement, installation of the air pollution control equipment, and pouring the foundation[9]. In addition, criteria pollutant emissions were also calculated for all on-road vehicles transporting workers, vendors, and material removal and delivery during construction using the California Emissions Estimator Model[10]® version 2016.3.1 (CalEEMod). The detailed output reports for the CalEEMod runs are included in Appendix B of this EA. Table 2-3 presents the results of the construction air quality analysis. Appendix B also contains the spreadsheets with the results and assumptions used for this analysis.

The construction impact analysis assumes that construction will take from one month up to five months to complete at each affected facility, with the time depending on the numbers of the air pollution control equipment to be constructed and whether the facility needs to demolish the existing building and construct a new building with total enclosure. However, the actual construction time could be substantially less than one month for some facilities. The peak daily emissions vary for each pollutant depending on the construction phase. Further, given the duration of the construction for each facility and the twelve month timeframe for all the affected facilities to comply with the requirements in PR 1430, it was conservatively assumed that the construction phases for some facilities would overlap which resulted in construction occurring at as many as 5 facilities on a peak day.

[9] In general, no or limited construction emissions from grading are anticipated because modifications or installation of new equipment would occur at existing industrial/commercial facilities and, therefore, would not be expected to require digging, earthmoving, grading, etc.

[10] CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects.

Table 2-3 summarizes the peak daily emissions associated with construction at all affected facilities. Therefore, the air quality impacts due to construction from implementation of PR 1430 are expected to be less than significant.

Table 2-3
Peak Daily Construction Emissions

ACTIVITY\POLLUTANT	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Scenario 1 - New Building Construction						
A. Demolition of Building	1.42	12.16	8.75	0.02	1.46	0.89
B. Demolition of Baghouse	1.40	11.60	8.64	0.01	1.37	0.88
C. Demolition of Baghouse Foundation	1.40	11.60	8.64	0.01	1.33	0.87
D. Grading	1.58	20.69	10.43	0.04	2.20	1.34
E. Building Construction	1.30	12.96	8.22	0.01	0.89	0.80
F. Building Paving	1.18	10.33	8.33	0.01	0.83	0.62
G. Baghouse Pad Paving	1.20	10.87	8.73	0.01	0.90	0.67
H. Baghouse Installation	1.97	16.30	9.95	0.02	0.97	0.90
Scenario 2 - New Baghouse/HEPA Installation						
E. Building Construction	0.79	6.98	3.29	0.01	0.39	0.34
B. Demolition of Baghouse	1.40	11.45	8.61	0.01	1.13	0.84
C. Demolition of Baghouse Foundation	1.40	11.45	8.61	0.01	1.13	0.84
G. Baghouse Pad Paving	0.66	5.92	4.47	0.01	0.48	0.37
H. Baghouse Installation	1.09	8.81	5.13	0.01	0.54	0.50
Scenario 3 - Building Improvement For Total Enclosure						
E. Building Construction	0.79	6.98	3.29	0.01	0.39	0.34
Daily Peak Construction Emissions	6	64	40	0.08	5.6	4.1
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Notes and assumptions:

a. All of the construction activities are expected to be completed 1 year after PR 1430 is adopted except for the construction activities required in the provision of the odor contingency measures which will not occur until 1 year after PR 1430 is adopted.

b. It is expected that five, 12, and five facilities will implement Scenario 1, 2 and 3, respectively. In Scenario 1 and 2, each facility will not have any construction sub-phases (from A to H) overlapping.

c. For all pollutants except VOC, the maximum emissions occur when five facilities with construction activities overlap [three under Scenario 1 (1D and two 1E) and two under Scenario 2 (2B and 2G)]. For VOC, the maximum emissions occur when five facilities with construction activities overlap [three under Scenario 1 (three 1E) and two under Scenario 2 (2C and 2H)].

d. Appendix B contains the detailed calculations.

Operational Impacts

As explained previously, secondary air quality operational impacts are expected to occur from the following activities: maintenance of the air pollution control equipment; source testing; and, housekeeping. Total operational emissions were estimated using CARB's OFFROAD2011for the off-road equipment (aerial lift) and EMFAC2014 for the mobile sources (for example, waste disposal trucks, source testing trucks, filter replacement trucks, and etc.). Currently, the affected facilities periodically send their collected PM, which is considered as hazardous waste, to the certified landfill or recycling facility for proper disposal or recycling. After PR 1430 is implemented, while additional PM is expected to be collected by the air pollution control equipment, the affected facilities are expected to continue their existing practices for handling their waste. PR 1430 would also require roof cleaning and source testing of the applicable air pollution control equipment for each affected facility. Roof cleaning is assumed to be performed with the assistance of aerial lifts. Source testing is assumed to require additional vehicle trips to the facility on the day of source testing. As a reasonable worst case analysis, it is assumed that each facility will utilize the following vehicles and off-road equipment each year: 1 waste/wastewater disposal truck, 1 source testing truck, 1 filter replacement truck, 1 filter inspection truck, and 1 aerial lift. Although it is unlikely, it is assumed that of the 22 facilities, 11 facilities would conduct maintenance of the air pollution control equipment, perform roof cleaning, and conduct source testing on the same day, such that 44 trucks and 11 aerial lifts would be operating on a peak day. In addition, a round trip distance of 40 miles was assumed for every on-road vehicle used during operation. The air quality impacts during operation are summarized in Table 2-4. Appendix B contains the detailed spreadsheets with the assumptions used for this analysis.

As indicated in Table 2-4, operational emissions anticipated from implementing PR 1430 do not exceed any significance threshold. Therefore, the operational air quality impact is considered less than significant. The proposed project is not expected to result in significant adverse operational criteria pollutant emission impacts.

Table 2-4
Peak Daily Operational Emissions

Key Requirements: Operation Phase [a]	**VOC, lb/day**	**NO_x, lb/day**	**CO, lb/day**	**SO_x, lb/day**	**PM_{10}, lb/day**	**$PM_{2.5}$, lb/day**
Point Source Emission Controls	1.41	1.21	0.70	0.30	0.22	0.01
Housekeeping [b]	9.47	15.92	1.44	1.11	2.97	0.02
Source Testing	1.14	1.13	0.34	0.20	0.20	0.00
Total Operational Emissions	12.02	18.26	2.49	1.61	3.39	0.03
SIGNIFICANCE THRESHOLD DURING OPERATION	55	55	550	150	150	55
SIGNIFICANT?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
[a.] The occasional delivery, recycling and disposal of PM or filters and the source testing trips are expected to generate mobile source emissions.
[b.] Housekeeping emissions are generated from the equipment used for conducting roof cleaning at the 11 overlapping facilities.
[c.] See Appendix B for detailed calculations.

Construction and Operation Overlap Impact

Given the number of affected facilities and the varying requirements for the facility's to comply with PR 1430 requirements, there is a possibility that there will be ~~an~~ overlaps between construction emissions at some facilities and operational emissions at other facilities. Based on PR 1430 requirements, the~~is~~ overlap will occur either at the time between month six and month 12 following PR 1430 adoption or ~~,~~ until one year after PR 1430 is adopted when there is a facility which triggers the odor contingency measures. The minor building enclosure enhancement is required to be implemented at the facility when the odor contingency measures are triggered. However, the emissions associated with these building enclosure enhancement activities are consider minimal and therefore will not exceed the maximum emissions previously estimated due to the overlap in construction and operation. The maximum emissions from the overlap period are expected to occur between month six and month twelve following PR 1430 adoption.

During this overlap period between month six and month twelve following PR 1430 adoption, only a limited number of operational vehicles and equipment will be needed at those facilities that have recently completed construction and installed the new baghouse systems and/or constructed the new total enclosure buildings because the compliance schedule for conducting roof top cleaning, baghouse replacement, or waste/wastewater disposal will not have been triggered. Therefore, during this overlap period, it was assumed that 8 source test, delivery, and disposal trucks and 2 aerial lifts will be used for operations on a peak day at two facilities, in addition to the construction emissions at four facilities, as presented in the Table 2-5. According to SCAQMD policy, the peak daily emissions from the construction and operation overlap period are estimated and compared to the SCAQMD's CEQA significance thresholds for operation in Table 2-5. The results show the impact from construction and operation overlap period is less than significant.

Table 2-5
Peak Daily Emissions in Construction and Operation Overlap Phase

Construction and Operation Overlap Phase	VOC, lb/day	NO_x, lb/day	CO, lb/day	SO_x, lb/day	PM_{10}, lb/day	$PM_{2.5}$, lb/day
Construction Emissions[a]	30.10 ~~2.19~~	48.08 ~~3.32~~	4.47 ~~0.45~~	3.06 ~~0.29~~	5.46 ~~0.62~~	0.07 ~~0.01~~
Operational Emissions[b]	2.19 ~~30.10~~	3.32 ~~48.08~~	0.45 ~~4.47~~	0.29 ~~3.06~~	0.62 ~~5.46~~	0.01 ~~0.07~~
Total Emissions	32.29	51.40	4.92	3.35	6.08	0.07
SIGNIFICANCE THRESHOLD DURING OPERATION	55	55	550	150	150	55
SIGNIFICANT?	**No**	**No**	**No**	**No**	**No**	**No**

Notes and assumptions:

a. The maximum construction impacts during the overlap phase occur when one facility is undergoing building construction and three facilities are performing baghouse construction/installation.

b. The maximum operational impact during the overlap phase occur when two facilities have operational emissions (up to 8 source test, delivery, and disposal trucks and 2 aerial lifts used on a peak day).

As indicated in Table 2-4, the emissions during the construction and operational overlap period anticipated from implementing PR 1430 do not exceed the SCAQMD's CEQA air quality significance thresholds. Therefore, the air quality impacts from construction and operation are considered less than significant. The proposed project is not expected to result in significant adverse air quality impacts during the construction and operation overlap period.

Indirect Criteria Pollutant Emissions from Electricity Consumption

Indirect criteria pollutant and GHG emissions are expected from the generation of electricity to operate new air pollution control equipment and ventilation system needed to create negative air conditions that occurs off-site at electricity generating facilities (EGFs). Emissions from electricity generating facilities are already evaluated in the CEQA documents for EGF projects when they are built or modified. The analysis in Section VI. - Energy b), c) and d) demonstrates that there is sufficient capacity from power providers for the increased electricity consumption needed to implement PR 1430.

Under the SCAQMD's RECLAIM program, EGFs were provided annual allocations of NO_x and SO_x emissions that typically decline annually. However, PR 1430 will cause an increase in energy use and a corresponding increase in emissions from the EGFs providing additional electricity (see Section VI. - Energy for the analysis of the energy impacts). Any potential NO_x and SO_x emission increases at the EGFs would need to be offset under the RECLAIM program in accordance with SCAQMD Regulation XX and increases in other pollutants would need to be offset under the New Source Review program in accordance with SCAQMD Regulation XIII – New Source Review. Thus, air quality impacts from electricity consumption are anticipated to be to less than significant.

III. c) Less Than Significant Impact.

Cumulatively Considerable Impacts

Based on the foregoing analysis, since criteria pollutant project-specific air quality impacts from implementing PR 1430 would not be expected to exceed the air quality significance thresholds in Table 2-1, cumulative air quality impacts are also expected to be less than significant. SCAQMD cumulative significance thresholds are the same as project-specific significance thresholds. Therefore, potential adverse impacts from implementing PR 1430 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 cumulatively considerable.

The SCAQMD guidance on addressing cumulative impacts for air quality is as follows: "As Lead Agency, the SCAQMD 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."[11]

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 SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD 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 SCAQMD'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 proposed project will not contribute to a significant unavoidable cumulative air quality impact.

[11] 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.

III. d) Less Than Significant Impact.

Toxic Air Contaminants During Construction

Diesel particulate matter (DPM) is considered a carcinogenic and chronic toxic air contaminant (TAC). Since the diesel equipment used during the construction of the new building or air pollution control equipment is expected to be a short-term project (i.e. no more than six months at any facility), a Health Risk Assessment (HRA) was not conducted, consistent with OEHHA Guidance (2015). If subsequent site-specific projects have additional details about TAC impacts, they will be evaluated under CEQA at that time. In addition, implementation of PR 1430 will reduce toxic impacts by controlling PM emissions (containing TACs).

Therefore, PR 1430 is not expected to generate significant adverse TAC impacts from construction.

Toxic Air Contaminants During Operation

Direct Health Risk Reductions from PR 1430
PR 1430 is expected to reduce overall TAC emissions from metal forging facilities by requiring total enclosures, air pollution control equipment and other requirements to assure compliance. Therefore, PR 1430 is expected to have the benefit of reducing adverse health risk impacts from these facilities to nearby sensitive receptors.

Secondary Health Risk Impacts from PR 1430
The operation of non-combustion air pollution control equipment, which may be needed to comply with PR 1430, will collect toxic PM but will not be expected to generate any TAC emissions since the types of air pollution control equipment are expected to be powered by electricity.

Based on the above discussion, PR 1430 is not expected be significant for exposing sensitive receptors to substantial concentrations.

III. e) Less Than Significant Impact.

Odor Impacts

As previously explained, this analysis assumes that new buildings and new or modified air pollution control equipment will be constructed at the affected facilities and these facilities already operate diesel equipment and trucks. With regard to odors, currently, for all diesel-fueled equipment and vehicles, the diesel fuel is required to have a low sulfur content (e.g., 15 ppm by weight or less) in accordance with SCAQMD Rule 431.2 – Sulfur Content of Liquid Fuels. Such fuel is expected to minimize odor. Because the operation of construction equipment will occur within the confines of existing affected facilities, sufficient dispersion of diesel emissions over distance generally occurs such that odors associated with diesel emissions may not be discernable to offsite receptors, depending on the location of the equipment and its distance relative to the nearest offsite receptor. Further, the diesel trucks that will be operated onsite as a part of construction activities will not be allowed to idle longer than five minutes per any one location in accordance with the CARB idling regulation, so odors from these vehicles would not be expected. Therefore, the addition of several pieces of construction equipment and haul trucks that will

operate intermittently, over a relatively short period of time, are not expected to generate diesel exhaust odor greater than what is already typically present at the affected facilities.

Operation of the new air pollution control equipment and blowers are also not expected to generate any new odors because these devices are electric and the process of collecting the metal PM in enclosed bags, containers and filters would mean that these odorous materials would be captured, such that the existing odor profiles at the affected facilities would be reduced. PR 1430 prohibits the outside metal grinding and requires all affected facilities to conduct all metal grinding and metal cutting operations inside total enclosures which will also reduce odors at these facilities. PR 1430 also includes a provision of odor contingency measures for any facility that has been notified by the Executive Officer of four confirmed odor complaints in any consecutive six months to implement odor reducing measures.

Thus, PR 1430 is not expected to create significant adverse objectionable odors during construction or operation. Since no significant impacts were identified for this issue, no mitigation measures for odors are necessary or required.

III. g) and h) Less Than Significant Impact.

Greenhouse Gas (GHG) Impacts

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (HSC §38505(g)). The most common GHG that results from human activity is CO_2, followed by CH_4 and N_2O.

Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. A study conducted on the health impacts of CO_2 "domes" that form over urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects[12].

The analysis of GHGs is a different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO_2 is approximately 100 years, for example, the effects of GHGs occur over a longer term which

[12] Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO_2 Domes," Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html.

means they affect the global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (i.e., annual emissions). GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects. GHG emission impacts from implementing PR 1430 were calculated at the project-specific level during construction and operation. For example, installation and operation of air pollution control equipment has the potential to increase the use of fuel during construction and electricity during operation which will in turn increase CO_2 emissions.

The SCAQMD convened a "Greenhouse Gas CEQA Significance Threshold Working Group" to consider a variety of benchmarks and potential significance thresholds to evaluate GHG impacts. On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD 2008). This GHG interim threshold is set at 10,000 metric tons of CO_2 equivalent emissions (CO_2e) per year (MT/yr). Projects with incremental increases below this threshold will not be cumulatively considerable.

Table 2-6 summarizes the GHG analysis which shows that PR 1430 may result in the generation of 17 amortized[13] MT/yr of CO_2e emissions during construction and ~~23~~ 25 MT/yr of CO_2e emissions during operation from all the affected facilities for a total of ~~40~~ 42 MT/yr of CO_2e emissions, which is less than the SCAQMD significance threshold. The detailed calculations of project GHG emissions can be found in Appendix B.

Table 2-6
GHG Emissions From 22 Affected Facilities

Activity	CO_2e (MT/year[a])
Construction [b]	17
Operation	~~23~~25
Total Project Emissions	**~~40~~42**
SIGNIFICANCE THRESHOLD	**10,000**
SIGNIFICANT?	**NO**

[a.] 1 metric ton = 2,205 pounds
[b.] GHGs from short-term construction activities are amortized over 30 years

Thus, as shown in Table 2-6, the SCAQMD's GHG significance threshold for industrial sources will not be exceeded. For this reason, implementing the proposed project is not expected to generate significant adverse cumulative GHG air quality impacts. Further, PR 1430 is not expected to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG gases.

[13] GHGs from short-term construction activities are amortized over 30 years. To amortize GHGs from temporary construction activities over a 30-year period (*est. life of the project/ equipment*), the amount of CO_2e emissions during construction are calculated and then divided by 30.

Conclusion
Based upon these considerations, significant air quality and GHG emissions impacts are not expected from implementing PR 1430. Since no significant air quality and GHG emissions impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** 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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

IV. a), b), c), & d) No Impact. The sites of the affected facilities that would be subject to PR 1430 currently do not support riparian habitat, federally protected wetlands, or migratory corridors because they are existing developed and established facilities currently 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 on or in close proximity to the affected facilities. Therefore, PR 1430 would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the District.

Compliance with PR 1430 is expected to reduce emissions from metal grinding and metal cutting operations at the affected facilities, which would be expected to improve, not worsen, present conditions of plant and animal life, since previously uncontrolled toxic and metal PM emissions would be captured and disposed of properly before they could have the potential to impact plant and animal life. PR 1430 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. Finally, the air pollution control equipment contemplated as part of implementing PR 1430 would be installed at the existing facilities and would not be built on or near a wetland or in the path of migratory species.

IV. e) & f) No Impact. The proposed project is not envisioned to conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by implementing PR 1430. Additionally, PR 1430 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 PR 1430 would occur at existing facilities in previously disturbed areas which are not typically subject to Habitat or Natural Community Conservation Plans.

The SCAQMD, as the Lead Agency, has found that, when considering the record as a whole, there is no evidence that implementing of PR 1430 would have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in Title 14 of the California Code of Regulations §753.5 (d) - Projects Eligible for a No Effect Determination.

Conclusion

Based upon these considerations, significant biological resource impacts are not expected from implementing PR 1430. Since no significant biological resource impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES.** Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource, site, or feature?	☐	☐	☐	☑
d)	Disturb any human remains, including those interred outside formal cemeteries?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
e)	Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074?	☐	☐	☐	☑

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, or tribal cultural significance to a community or ethnic or social group or a California Native American tribe.
- Unique paleontological resources or objects with cultural value to a California Native American tribe are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

V. a) No Impact. There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. For example, CEQA Guidelines state that generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources, which include the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- Has yielded or may be likely to yield information important in prehistory or history (CEQA Guidelines §15064.5).

Buildings, structures, and other potential culturally significant resources that are less than 50 years old are generally excluded from listing in the National Register of Historic Places, unless they are shown to be exceptionally important. For any of the buildings or structures that may be affected by PR 1430 that are older than 50 years, they are buildings that are currently utilized for industrial purposes and would generally not be considered historically significant since they would not have

any of the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. Therefore, PR 1430 is not expected to cause any impacts to significant historic cultural resources.

V. b), c), & d) No Impact. The installation of new or the modification of existing buildings or air pollution control equipment to comply with PR 1430 may require disturbance of previously disturbed areas at the affected existing industrial facilities. However, since construction-related activities are expected to be confined within the existing footprint of the affected facilities that have been fully developed and paved, PR 1430 is not expected to require physical changes to the environment which may disturb paleontological or archaeological resources. Furthermore, it is envisioned that these areas are already either devoid of significant cultural resources or whose cultural resources have been previously disturbed. Therefore, PR 1430 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. Implementing of PR 1430 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.

V. e) No Impact. PR 1430 is not expected to require physical changes to a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American Tribe. Furthermore, PR 1430 is not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. For these reasons, PR 1430 is not expected to cause any substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074.

As part of releasing this CEQA document for public review and comment, the SCAQMD also provided a formal notice of the proposed project to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission's (NAHC) notification list per Public Resources Code §21080.3.1(b)(1). The NAHC notification list provides a 30-day period during which a Tribe may respond to the formal notice, in writing, requesting consultation on the proposed project.

In the event that a Tribe submits a written request for consultation during this 30-day period, the SCAQMD will initiate a consultation with the Tribe within 30 days of receiving the request in accordance with Public Resources Code §21080.3.1(b). Consultation ends when either: 1) both parties agree to measures to avoid or mitigate a significant effect on a Tribal Cultural Resource and agreed upon mitigation measures shall be recommended for inclusion in the environmental document [see Public Resources Code §21082.3(a)]; or, 2) either party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached [see Public Resources Code §21080.3.2(b)(1)-(2) and §21080.3.1(b)(1)].

Conclusion

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PR 1430. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VI.	**ENERGY.** Would the project:				
a)	Conflict with adopted energy conservation plans?	☐	☐	☐	☑
b)	Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☑	☐
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☑	☐
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☑	☐
e)	Comply with existing energy standards?	☐	☐	☐	☑

Significance Criteria

Impacts to energy 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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

VI. a) & e) No Impact. PR 1430 is not expected to conflict with any adopted energy conservation plans or violate any energy conservation standards because existing facilities would be expected to continue implementing any existing energy conservation plans that are currently in place regardless of whether PR 1430 is implemented.

PR 1430 is not expected to cause new development because it does not require new metal forging facilities to be built. While PR 1430 will primarily apply to existing facilities, it will also apply to

any new facilities that may be built in the future. However, SCAQMD staff is not aware of any new metal forging facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Any energy resources that may be necessary to install total enclosures, air pollution control equipment, conduct source tests, conduct monitoring and employ housekeeping would be used to achieve reductions in toxics, PM and odors from metal grinding and metal cutting operations at metal forging facilities, and therefore, would not be using non-renewable resources in a wasteful manner. The air quality benefits that would be expected to occur as a result of implementing these activities would not require utilities that would provide additional electricity and natural gas to the affected facilities to substantially alter power or natural gas system because any additional energy needed to implement PR 1430 can be provided from existing supplies. For these reasons, PR 1430 would not be expected to conflict with energy conservation plans or existing energy standards, or use non-renewable resources in a wasteful manner.

VI. b), c) & d) Less Than Significant Impact. PR 1430 will increase the use of electricity from the operation of air pollution control equipment, including the ventilation systems needed to create negative air conditions in the total enclosures. Diesel fuel would be consumed by construction equipment, maintenance equipment, and on-road vehicles during housekeeping, delivery, and hauling trips. No natural gas will be needed during construction. The following sections evaluate the various forms of energy sources that may be affected by the implementation of PR 1430.

Construction-Related Impacts

During the various phases of construction, diesel and gasoline fuel will be consumed by portable construction equipment (e.g., welders, cranes, pavers, mixers, generators, forklifts, etc.) needed to install air pollution control equipment, total enclosures, and monitoring equipment and by construction workers' vehicles and delivery/haul trucks traveling to and from each construction site. To estimate "worst-case" energy impacts associated with construction activities, the SCAQMD staff took the total construction SO_x emissions to scale to the total diesel fuel usage since the estimated SO_x emissions during construction are derived from CARB's OFFROAD2011 and EMFAC2014 models. These two models both calculate the SO_x emissions based on the mass-balanced method and the sulfur content in the fuel. Therefore, the total diesel fuel consumption from construction associated equipment and trucks can be estimated by scaling the SO_x emissions from one single piece of construction equipment with known diesel fuel usage in gallons per day to the total construction SO_x emissions. Appendix B contains the assumptions and calculations for estimating fuel usage associated with construction.

The fuel usage per construction worker commute round trips was calculated by assuming that each workers' gasoline vehicle would get a fuel economy rate of approximately 15 miles per gallon and would travel 30 miles round trip to and from the construction site in one day. As explained previously, a peak construction day is based on nine facilities with overlapping construction phases occurring on a given day. Table 2-7 lists the projected energy impacts associated with the construction from all affected facilities.

Table 2-7
Total Projected Fuel Usage for Construction Activities

Fuel Type	Year 2015 Estimated Basin Fuel Demand[a] (mmgal/yr)	Fuel Usage[b] (mmgal/yr)	Total % Above Baseline	Exceed Significance?[c]
Diesel	756	0.03	0.004	No
Gasoline	6,783	0.0057	0.0001	No

[a] California Annual Retail Fuel Outlet Report Results in 2015, 2015 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/2015_A15_Results.xlsx). [Accessed December 27, 2016.]
[b] Estimated peak fuel usage from construction activities. Diesel usage estimates are based on the usage of portable construction equipment and on-road vehicles conducting haul/delivery trips. Gasoline usage estimates are derived from construction workers' vehicle daily trips to and from work.
[c] SCAQMD's energy threshold for both types of fuel used is 1% of fuel supply.

The 2015 California Annual Retail Fuel Outlet Report Results from the California Energy Commission (CEC) state that 585 million gallons of diesel and 6,579 million gallons of gasoline were consumed in 2015 in the South Coast Air Basin. Thus, if an additional 26,451 gallons of diesel consumed and 5,771 gallons of gasoline are consumed during construction, no significant adverse impact on fuel supplies would be expected.

Operational Energy Impacts

Electricity Use

SCAQMD staff estimates there will be additional electricity usage for the new air pollution control equipment, including the ventilation systems needed to create negative air conditions in the total enclosures. The air pollution control equipment (baghouse with or without HEPA) and the ventilation systems (blowers) are expected to be powered by electricity.

The analysis assumes that 23 additional blowers would be needed to operate the air pollution control equipment and ~~5~~ 10 additional blowers to operate the ventilation systems needed to create negative air conditions at ~~five~~ 10 of the 22 facilities. The additional electricity consumption from operation is estimated and presented in Table 2-8. Electrical energy impacts associated with project operation are considered less than significant.

Table 2-8
PR 1430 Additional Electricity Consumption from Operation

Energy Use	Consumption (GW-h)
Air Pollution Control Equipment: Blowers and Baghouses (100 bhp @ 0.001788 GW-h) x 26	0.046
Blowers to create negative air conditions (100 bhp@ 0.001788 GW-h) x ~~6~~10	0.018~~1~~
Total Use:	0.06~~4~~57
SCAQMD Basin Electricity End Use Consumption [a,b]	120,210
Total Impact % of Capacity	**0.00005**
SIGNIFICANT?[b]	**NO**

[a] 2016 Draft Final SCAQMD AQMP Chapter 10, 2012 Electricity Use in GWh (http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draft-final-aqmp/strikeout/11ch10-draft-final-120116.pdf)
[b] It is assumed the energy supply is equal to energy consumption.
[c] SCAQMD's energy threshold for electricity is 1% of supply.

Diesel Use From Trucks
Additional truck trips are expected to be needed for the additional source testing, filter replacement or inspection, and disposal of waste. Each truck is assumed to drive approximately 40 miles, round trip, with a fuel economy of approximately five miles per gallon (mpg) which would mean that each truck would use approximately 8 gallons (40 miles ÷ 5 mpg) of diesel fuel per round trip. As previously explained in Section III. Air Quality and Greenhouse Gases, by assuming that each facility will need 4 trucks per year, 88 trucks per year will be needed for all 22 facilities and the corresponding annual total diesel use would be 704 gallons per year.

Diesel Use From Aerial Lifts
PR 1430 requires roof cleaning of each facility on a semi-annual basis and aerial lifts are assumed to be needed in order for facility employees to be able to access the rooftops. For this analysis, the aerial lifts are assumed to be used for four hours per year at each facility. Diesel fuel use was estimated using a 1.4 gallon per hour fuel consumption rate from CARB's OFFROAD2007 database, which is an older version of OFFROAD2011, is the only model which provides the fuel usage data as an output. The diesel fuel use from one aerial lift is estimated to be approximately 5.6 gallons per year. The worst case for all 22 facilities utilizing aerial lifts according to the annual roof cleaning schedule would be that 123.2 gallons per year of diesel fuel would be consumed.

The 2015 California Annual Retail Fuel Outlet Report Results from California Energy Commission states that 585 million gallons of diesel are consumed in 2015 in South Coast Air Basin. Thus, based on the foregoing analysis and the summary presented in Table 2-9, an additional 827.2 gallons of diesel consumed per year of operation at all 22 facilities is not expected to have a significant adverse impact on fuel supplies.

Table 2-9
Annual Total Projected Fuel Usage for Operational Activities

Type of Equipment	Diesel (gal/yr)
Trucks	704
Aerial Lifts	123.2
Total:	827.2
Year 2015 Estimated Basin Fuel Demand (gal/yr) [a]	585,000,000
Total % Above Baseline	0.0001
SIGNIFICANT?[b]	**NO**

[a] California Annual Retail Fuel Outlet Report Results in 2012, 2015 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/2015_A15_Results.xlsx). [Accessed December 27, 2016.]

[b] SCAQMD's energy threshold for fuel used is 1% of fuel supply.

Natural Gas Impacts

None of the air pollution control equipment or ventilation systems requires natural gas for operation as these units require electricity. Similarly, none of the vehicles that may be needed to deliver supplies or haul away waste would require natural gas. Thus, no natural gas would be required to implement PR 1430.

Based on the foregoing analysis, the operational-related activities associated with the implementation of PR 1430 are necessary and will not use energy in a wasteful manner and will not result in substantial depletion of existing energy resource supplies. Further, as shown in the preceding analysis, the quantities of electricity, gasoline and diesel fuel needed to implement PR 1430 would not create a significant demand of energy when compared to existing supplies. Thus, there are no significant adverse energy resources impacts associated with the implementation of PR 1430.

Conclusion

Based upon these considerations, significant adverse energy impacts are not expected from implementing PR 1430. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VII.	**GEOLOGY AND SOILS.** Would the project:				
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☑
	• 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?	☐	☐	☐	☑
	• Strong seismic ground shaking?	☐	☐	☐	☑
	• Seismic–related ground failure, including liquefaction?	☐	☐	☐	☑
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

VII. a) No Impact. Since PR 1430 would result in construction activities at existing facilities located in developed, mostly industrial and commercial settings, to install or modify buildings and air pollution control equipment, minor site preparation is anticipated that could adversely affect geophysical conditions in the District. While some new enclosures and air pollution controls may be installed at existing facilities, the project does not cause or require a new facility to be constructed.

Southern California is an area of known seismic activity. 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. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, the installation of new or modification of existing enclosures or air pollution control equipment at existing facilities to comply with PR 1430 is expected to conform to the Uniform Building Code and all other applicable state and local building codes. Structures must be designed to comply with the Uniform Building Code Zone 4 requirements if they are located in a seismically active area. The local city or county is responsible for assuring that the existing affected facilities comply with the Uniform Building Code as part of the issuance of the building permits 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 goal of the code is to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage but with some non-structural damage; and, 3) resist major earthquakes without collapse but with some structural and non-structural damage.

The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The Uniform Building Code bases seismic design on minimum lateral seismic forces (“ground shaking”). The basic formulas used for the Uniform Building Code

seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, existing buildings and equipment, as well as any that may be modified or replaced as a result of PR 1430, are likely to conform to the Uniform Building Code and all other applicable state codes in effect at the time they were constructed. Thus, PR 1430 would not alter the exposure of people or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structures to the risk of loss, injury, or death involving the rupture of an earthquake fault, seismic ground shaking, ground failure or landslides is not anticipated.

VII. b) Less than Significant Impact. Since PR 1430 would require the installation of new or the modification of existing buildings and air pollution control equipment at existing developed facilities, construction activities such as grading may be necessary to prepare a level foundation. As such, temporary erosion resulting from grading activities may be expected. However, these grading activities and any associated temporary erosion that may occur are expected to be relatively minimal since the existing facilities are generally flat and have previously been graded and paved. For this reason, no unstable earth conditions or changes in geologic substructures are expected to result from implementing PR 1430. It is important to note that potential air quality impacts related to grading are addressed in Section III as part of the construction air quality impact discussion.

Further, wind erosion is not expected to occur to any appreciable extent, because operators at sites with the potential to generate dust would be required to comply with the best available control measure (BACM) requirements of SCAQMD Rule 403 – Fugitive Dust. In general, operators must control fugitive dust through a number of soil stabilizing measures such as watering the site, using chemical soil stabilizers, revegetating inactive sites, etc. Therefore, impacts to the loss of topsoil and soil erosion are less than significant.

VII. c) No Impact. Since PR 1430 will affect existing facilities, it is expected that the soil types present at the affected facilities will not be made further susceptible to expansion or liquefaction. Furthermore, subsidence is not anticipated to be a problem since only minor excavation, grading, or filling activities are expected to occur at the affected facilities. Additionally, the areas where the existing facilities are located are not envisioned to be prone to new landslide impacts or have unique geologic features since the existing facilities are currently operational. Any installations of new or modifications to existing buildings or air pollution control equipment would not be expected to increase or exacerbate any existing risks at the affected facility locations. Therefore, because PR 1430 would not involve locating facilities 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, no impacts are anticipated.

VII. d) & e) No Impact. Since PR 1430 will affect metal grinding and metal cutting operations at existing facilities by requiring the installation of new or the modification of existing building and air pollution control equipment, people or property will not be exposed to new impacts related to expansive soils or soils incapable of supporting water disposal because no water will be necessary to operate the buildings or air pollution control equipment. Further, because each affected facility has an existing sewer system the installation of septic tanks or alternative

wastewater disposal systems or modifications to the existing sewer systems would not be necessary. Thus, implementation of PR 1430 will not adversely affect soils associated with a installing a new septic system or alternative wastewater disposal system or modifying an existing sewer.

Conclusion

Based upon these considerations, significant adverse geology and soils impacts are not expected from the implementation of PR 1430. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	☐	☐	☑	☐
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?	☐	☐	☑	☐
c)	Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
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?	☐	☐	☐	☑
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑	☐

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

VIII. a) & b) Less than Significant Impact. PR 1430 may increase the amount of metal PM that is captured by air pollution control equipment, in lieu of being directly emitted into the air, which will in turn, cause a subsequent increase in the amount of metal particulate matter waste. Additional metal PM emissions will also be captured through facility owners/operators employing additional housekeeping practices on a regular basis. Overall, the capture of these metal PM emissions would reduce health risks to the public and the environment.

Spent metal is currently transported from affected facilities to offsite facilities that either recycle or dispose of the metal waste at a hazardous waste landfill. Once PR 1430 is implemented and the

construction of the total enclosures and air pollution control equipment is completed, the additional metals that will be captured by the new air pollution control systems would continue to be either recycled off-site or hauled away to a hazardous waste landfill, which is what the affected facilities are currently doing. Hence, no new significant hazards are expected to the public or environment through the continued routine transport, disposal or recycling of metal waste generated at metal forging facilities.

Therefore, PR 1430 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) Less than Significant Impact. There are six facilities that are located within a one quarter mile of a school. These facilities and the names of the schools and their proximities are identified in Appendix C. PR 1430, if implemented, would reduce human exposure to toxics by requiring metal PM emissions from metal grinding and metal cutting operations to be collected and vented to air pollution control equipment instead of being vented to the atmosphere. All of the affected facilities, including the six that are located within one quarter mile of a school, are expected to continue to take the appropriate and required actions to ensure proper handling of existing quantities of hazardous or acutely hazardous materials, substances or wastes that are currently generated. Further, any increased quantities that may be collected at each facility by efficient collection systems and air pollution control equipment that will be employed as a result of PR 1430, would also be expected to be handled in the same or similar manner regardless of each facility's proximity to a school because PR 1430 does not include new requirements or alter existing requirements for hazardous waste disposal.

VIII. d) No Impact. Government Code §65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). PR 1430 would affect four facilities that are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per Government Code §65962.5. These facilities are identified in Appendix C. However, compliance with PR 1430 will ensure that metal PM, which may be toxic and hazardous, will be captured by air pollution control equipment. The more material that is captured, the less that will be emitted directly to the atmosphere. Currently, metal PM waste is stored and transported in closed containers and PR 1430 would not alter existing or add new requirements to change how the metal waste is stored while awaiting to be transported off-site to a recycling facility or a hazardous waste landfill. Hazardous wastes from the existing facilities are required to be managed in accordance with applicable federal, state, and local rules and regulations and compliance with these regulations is expected to continue after PR 1430 is implemented. Therefore, compliance with PR 1430 would not create a new significant hazard to the public or environment.

VIII. e) No Impact. One of the affected facilities, Continental Forge, is located within two miles of an airport (Compton Airport) but it is not located within the airport runway safety areas, airport runway protection zones, or within a transitional surface area which is required to be free of all obstructions. Therefore, if the owner/operator of Continental Forge makes modifications to its facility to comply with PR 1430, the modifications would not be 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) No Impact. Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering

agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

- Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
- Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
- Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
- Procedures to notify the necessary persons who can respond to an emergency within the facility;
- Details of evacuation plans and procedures;
- Descriptions of the emergency equipment available in the facility;
- Identification of local emergency medical assistance; and,
- Training (initial and refresher) programs for employees in:
    1. The safe handling of hazardous materials used by the business;
    2. Methods of working with the local public emergency response agencies;
    3. The use of emergency response resources under control of the handler;
    4. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area.

Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public (surrounding local communities), but 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. Further, the existing facilities already have an emergency response plan in place, as applicable. While the installation of air pollution control equipment and total enclosures may require an update of each affected facility's existing emergency response plan to reflect the new equipment or building modifications, the action of modifying an emergency response plan will not create any environmental impacts. Thus, PR 1430 is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII. g) No Impact. The facilities affected by PR 1430 are currently located in existing industrial, commercial or mixed land use areas and are not located near wildlands; therefore, there is no existing risk from wildland fires and implementation of PR 1430 would not create a new risk.

The proposed project would also not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees since no substantial or native vegetation typically exists on or near the facilities (specifically because they could be a fire hazard). Thus, PR 1430 is not expected to expose people or structures to wildfires. Therefore, no significant increase in wildland fire hazards is expected at the facilities that would be affected by the proposed project.

VIII. h) Less Than Significant Impact. 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 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 the potential risk of upset. PR 1430 would not change the existing requirements and permit conditions for the proper handling of flammable materials. Further, PR 1430 does not contain any requirements that would prompt facility owners/operators to begin using new flammable materials. In addition, the National Fire Protection Association has special designations for deflagrations (e.g., explosion prevention) from metal dust. Therefore, operators of metal grinding activities that require baghouse emission control technologies will also need to select reliable, economical and effective means of explosion control such as baghouse explosion suppression, containment and venting. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design*, 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

Conclusion

Based upon these considerations, significant adverse hazards and hazardous materials impacts are not expected from implementing PR 1430. Since no significant hazards and hazardous materials impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IX.	**HYDROLOGY AND WATER QUALITY.** 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?	☐	☐	☑	☐
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)?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding 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?	☐	☐	☑	☐
h)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☑	☐
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?	☐	☐	☑	☐

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

IX. a) Less than Significant Impact. PR 1430 contains requirements for facility owners/operators to conduct metal grinding and metal cutting operations within total enclosures and to vent these total enclosures to air pollution control equipment such as baghouses and HEPA filters. The ventilation systems, baghouses and HEPA filters do not utilize water as part of their day-to-day functions. Thus, no wastewater will be generated from the use of air pollution control equipment to control emissions from metal grinding and metal cutting activities.

PR 1430 also contains housekeeping requirements that require facility owners/operators to clean: 1) the roof tops that house areas associated with metal grinding or metal cutting operations on a semi-annual basis; 2) the inside of the building or total enclosure areas where metal grinding or metal cutting operations occur on a monthly basis; 3) areas where metal containing wastes generated from metal grinding or metal cutting operations are stored, disposed of, recovered or recycled on a daily basis; 4) floors within 20 feet of metal grinding and metal cutting work stations or any entrance/exit point for an existing enclosure or total enclosure on a daily basis; and, 5) floors within 10 feet of an emission control device dedicated to metal grinding or metal cutting operations on a daily basis. When employing these housekeeping efforts, PR 1430 provides facility owners/operators with a choice of using either wet cleaning or dry HEPA vacuuming. If dry HEPA vacuuming is used to comply with the housekeeping requirements, then no water would be needed and no wastewater would be generated. There are 22 facilities that would be required to conduct housekeeping and some facility operators have indicated to SCAQMD staff during site visits that they would prefer to conduct dry HEPA vacuuming in lieu of wet cleaning because dry HEPA vacuuming would allow for the recycling and sale of the captured precious metals. Further, facility owners/operators indicated that wet cleaning would be less preferable because it would require the use of water and the treatment of the cleaning water prior to disposal, which may increase costs.

Nonetheless, because PR 1430 provides wet cleaning as an option for complying with the housekeeping requirements, this analysis assumes that wet cleaning could potentially occur and wastewater may be generated as a result. For any facility owner/operator that chooses to conduct wet cleaning, but that does not currently have a wastewater treatment system or a wastewater discharge permit, the dirty water resulting from wet cleaning would need to be collected, stored

and disposed of as hazardous materials and these facilities would be required to comply with the applicable hazardous waste disposal regulations. Thus, the collected dirty water at these facilities would not be allowed to be discharged as wastewater.

For any affected facility that has a wastewater discharge permit, the owner/operator will be required to comply with the permitted effluent discharge concentration and flow limits which means the any wastewater generated from conducting housekeeping via wet cleaning would likely need to be treated prior to discharge.

In either of these scenarios, wet cleaning conducted in accordance with complying with the housekeeping requirements in PR 1430 would not be expected to violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable of the Publicly Owned Treatment Works (POTW) or Regional Water Quality Control Board, or otherwise substantially degrade water quality that the requirements are meant to protect.

IX. b) No Impact. As previously explained, water is not needed to operate the total enclosures and vent the metal grinding and metal cutting operations to air pollution control equipment. For any facility owners/operators that choose to conduct wet cleaning, any additional water needed would likely be supplied by each facility's current water supplier. Further, the quality of water that would likely be supplied to each affected facility will be potable water since potable water is currently supplied at all of the affected facilities in order to provide drinking water for employees, water for sinks and toilets, and water for any landscaping, if applicable. Should any of the affected facilities have a groundwater well onsite with groundwater pumping rights, the facility owners/operators would not likely choose to use groundwater in lieu of potable water to conduct wet cleaning because groundwater typically contains sand and other soil particles and debris which would not be a suitable quality for conducting wet cleaning. Therefore, implementation of PR 1430 would not be expected to cause facilities to utilize groundwater for conducting wet cleaning, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge.

IX. c) & d) No Impact. PR 1430 contains requirements for facility owners/operators to conduct metal grinding and metal cutting operations within total enclosures and to vent these total enclosures to air pollution control equipment such as baghouses and HEPA filters. Facilities that are not currently equipped with total enclosures that vent to air pollution control equipment will be required to construct the total enclosures and install ventilation and air pollution control equipment such as baghouses and HEPA filters. Because the ventilation systems, baghouses and HEPA filters do not utilize water as part of their day-to-day functions, no new drainage facilities or alterations to existing drainage facilities will be needed beyond what currently exists at the existing facilities. Similarly, there are no streams or rivers running through the properties of the existing facilities, so any construction activities that may occur as a result of complying with PR 1430 would not be expected to alter the course of a stream or river. Finally, as part of building the total enclosures and installing the ventilation and air pollution control systems, some minor earthwork will be needed to prepare the affected areas for a new foundation at each affected facility. Any construction activities, however, would not be expected to permanently create unpaved areas that would be vulnerable to surface runoff, erosion, siltation or flooding, either on- or offsite. Thus, PR 1430 is not expected to have any 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 because PR 1430 does not contain any requirements that would change existing drainage patterns or the procedures for how surface runoff water is handled.

IX. e) & f) No Impact. The facilities affected by PR 1430 are currently located in existing industrial, commercial or mixed land use areas. Since PR 1430 would result in construction activities at existing facilities to install or modify buildings, total enclosures, and air pollution control equipment, some minor site preparation and construction activities may be necessary. However, while some new total enclosures and air pollution control equipment may be installed at existing facilities, PR 1430 would not cause or require a new facility or new housing to be constructed. Further, the construction of the new total enclosures and air pollution control equipment would occur on-site at the existing facilities. Therefore, PR 1430 is not expected to result in placing housing or structures in 100-year flood hazard areas that could create new flood hazards or create significant adverse risk impacts from flooding as a result of failure of a levee or dam or inundation by seiches, tsunamis, or mudflows.

IX. g) and i) Less than Significant Impact. As explained in Section IX. a), PR 1430 provides facility owners/operators with a choice of using either wet cleaning or dry HEPA vacuuming. If dry HEPA vacuuming is used to comply with the housekeeping requirements, then no water would be needed and no wastewater would be generated. There are 22 facilities that would be required to conduct housekeeping and some facility operators have indicated to SCAQMD staff during site visits that they would prefer to conduct dry HEPA vacuuming in lieu of wet cleaning because dry HEPA vacuuming would allow for the recycling and sale of the captured precious metals. Further, wet cleaning would be less preferable because it would require the use of water and the treatment of the cleaning water prior to disposal.

Nonetheless, because PR 1430 provides wet cleaning as an option for complying with the housekeeping requirements, this analysis assumes that some wet cleaning could occur and wastewater may be generated. SCAQMD staff is unable to predict with any precision the number of facilities that will actually elect to conduct wet cleaning, the amount of water that would be needed, and the amount of wastewater that may be generated as part of conducting wet cleaning to comply with PR 1430.

To get an idea of the scale of water and water quality impacts that might occur from conducting wet cleaning to comply with PR 1430, SCAQMD staff consulted the hydrology and water quality analysis contained in the Final Environmental Assessment for Rule 1420.2 – Emissions Standards for Lead from Metal Melting Facilities Final Environmental Assessment (October 2015)[14], because Rule 1420.2 contains similar housekeeping requirements to those in PR 1430 and the calculated water use estimates for conducting wet cleaning to comply with Rule 1420.2 was based on a peak daily use. Table 2-10 compares the housekeeping requirements contained in PR 1430 with those adopted in Rule 1420.2.

[14] SCAQMD, Final Environmental Assessment for Proposed Rule 1420.2 - Emissions Standards for Lead from Lead Melting Facilities, certified October 2, 2015. http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2015/pr-1420_2-final-ea.pdf

Table 2-10
Comparison of Housekeeping Requirements in PR 1430 and Rule 1420.2

PR 1430			Rule 1420.2		
Cleaning Task	**Cleaning Method**	**Cleaning Frequency**	**Cleaning Task**	**Cleaning Method**	**Cleaning Frequency**
Areas where metal containing wastes generated from metal grinding or metal cutting operations are stored, disposed of, recovered or recycled	Wet cleaning or Dry HEPA Vacuuming	Daily	Areas where lead-containing wastes generated from housekeeping activities are stored, disposed of, recovered or recycled	Wet cleaning or Dry HEPA Vacuuming	Weekly
Floors within 20 feet of metal grinding and metal cutting work stations or any entrance/exit point for an existing enclosure or total enclosure	Wet cleaning or Dry HEPA Vacuuming	Daily	Surfaces that accumulate lead-containing dust subject to foot traffic.	Wet cleaning or Dry HEPA Vacuuming	Weekly
Floors within 10 feet of an emission control device dedicated to metal grinding or metal cutting operations	Wet cleaning or Dry HEPA Vacuuming	Daily			
Inside of the building or total enclosure areas where metal grinding or metal cutting operations occur on a basis	Wet cleaning or Dry HEPA Vacuuming	Monthly			
Roof tops that house areas associated with metal grinding or metal cutting operations	Wet cleaning or Dry HEPA Vacuuming	Semi-annually	Cleanings of roof tops on structures > 45 feet in height that house areas associated with the processing, handling, or storage of lead-containing materials capable of generating any amount of fugitive lead-dust, excluding areas associated with the storage of raw, unprocessed lead-containing materials or finished lead-containing products	Wet cleaning or Dry HEPA Vacuuming	Semi-annually
			Cleanings of roof tops on structures < 45 feet in height that house areas associated with the processing, handling, or storage of lead-containing materials capable of generating any amount of fugitive lead-dust, excluding areas associated with the storage of raw, unprocessed lead-containing materials or finished lead-containing products	Wet cleaning or Dry HEPA Vacuuming	Quarterly

The hydrology and water quality analysis for Rule 1420.2 estimated that 13 facilities would need a total of 82,372 gallons per day of water and an equivalent amount of wastewater would be generated, which equates to approximately 6,406 gallons per day of water needed and wastewater generated at each facility that conducts wet cleaning to comply with the housekeeping measures. As illustrated in Table 2-9, the cleaning frequencies for the various tasks do not exactly align such that in some cases, the cleaning frequency would be less often under PR 1430 than for Rule 1420.2 while in other cases, the cleaning frequency is more often. Nonetheless, this comparison provides helpful information to grasp what the overall water demand and wastewater impacts from implementing PR 1430 could be.

For PR 1430, while there are 22 facilities that would be required to comply with the housekeeping requirements, facility owners/operators indicated a preference for conducting dry HEPA vacuuming in lieu of wet cleaning. Thus, not all 22 facilities would be expected to conduct wet cleaning to comply with the housekeeping requirements in PR 1430. For a conservative analysis, half of affected facilities (e.g., 11) were assumed to conduct wet cleaning on the same day to comply with the housekeeping requirements in PR 1430. By applying the maximum amount of water that was estimated to be needed per facility for Rule 1420.2 (e.g., 6,406 gallons per day), then an equivalent amount of wastewater may also be generated per facility.

If the maximum amount of water that could be used by 11 facilities on a peak day to conduct wet cleaning in response to PR 1430 is equivalent to the analysis in Rule 1420.2, then PR 1430 could require 70,466 gallons of water to conduct wet cleaning and could generate the same amount as wastewater (e.g., 11 facilities x 6,406 gallons per day). Based on the facility owner/operator preference to use dry HEPA vacuuming, SCAQMD staff believes that the estimated use of water and the corresponding generation of wastewater on a peak day probably substantially overestimates what the actual impact may be. Also, it is important to keep in mind that the maximum amount of water needed to conduct wet cleaning at one facility was estimated to be 6,406 gallons per day so any wastewater generated at an individual facility should be well within the existing and projected overall capacity of POTWs located throughout the District whenever the wet cleaning activities are conducted. Therefore, wastewater impacts associated with the disposal of waterborne clean-up waste material generated from implementing PR 1430 are not expected to significantly adversely affect POTW operations. Further, the small volume of wastewater that may be generated from wet cleaning would not be expected to require or warrant the construction of new or the expansion of existing wastewater treatment or storm water drainage facilities.

IX. h) Less than Significant Impact. As explained in Section IX. g) and i), if half of affected facilities (e.g., 11) are assumed to conduct wet cleaning on the same day at the same water demand rate that was estimated in the hydrology and water quality analysis for Rule 1420.2, then the maximum amount of water that may be needed per facility would be 6,406 gallons per day or 70,466 gallons per day for 11 facilities. Table 2-11 summarizes the projected amount of water that may be needed for the 11 affected facilities to conduct wet cleaning to comply with the housekeeping requirements in PR 1430.

Table 2-11
Projected Water Demand

PR 1430 Wet Cleaning Activity	Additional Water Demand on a Peak Day (gal/day)
PR 1430 Housekeeping Measures	70,466
Significance Threshold for Potable Water:	262,820
SIGNIFICANT FOR POTABLE WATER?	**NO**
Significance Threshold for Total Water:	5,000,000
SIGNIFICANT FOR TOTAL WATER?	**NO**

Therefore, since the estimated potable water demand and total water demand would be less than significance thresholds for potable and total water, respectively, the water demand impacts that are expected occur from implementing PR 1430 would be less than significant. Further, existing water supplies are expected to be sufficiently available to serve the proposed project from existing entitlements and resources without the need for new or expanded entitlements because the projected increased water demand is based on a peak day, but that amount of water will not be needed every day. Therefore, PR 1430 is not expected to have significant adverse water demand impacts.

Conclusion

Based upon these considerations, significant adverse hydrology and water quality impacts are not expected from implementing PR 1430. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

X. a) No Impact. PR 1430 does not require the construction of new facilities, and any physical effects that will result from PR 1430, will occur at existing facilities located in commercial/industrial areas and would not be expected to go beyond existing boundaries. For this reason, implementation of PR 1430 would not be expected to physically divide an established community. Therefore, no impacts are anticipated.

X. b) No Impact. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by PR 1430. All construction and operation activities that are expected to occur as a result of complying with PR 1430 will occur within the confines of the existing facilities and would not be expected to affect or conflict with any applicable land use plans, policies, or regulations. Further, no new development or alterations to existing land designations will occur as a result of the implementation of PR 1430. Therefore, present or planned land uses in the region will not be affected as a result of implementing PR 1430.

Conclusion

Based upon these considerations, significant adverse land use and planning impacts are not expected from implementing PR 1430. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES.** 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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XI. a) & b) No Impact. PR 1430 would require the installation of new or the modification of existing buildings and air pollution control equipment. The construction and operation activities necessary to implement PR 1430 would not require the use of a known mineral resource. Thus, there are no provisions in PR 1430 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.

Conclusion

Based upon these considerations, significant adverse mineral resource impacts are not expected from implementing PR 1430. Since no significant mineral resource impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XII.	**NOISE.** 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?	☐	☐	☑	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
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?	☐	☐	☑	☐

Significance Criteria

Noise impact 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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities

affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XII. a), b), & c) Less than Significant Impact. The facilities affected by PR1430 are currently located in urbanized industrial or commercial areas. The existing noise environment at each of the facilities is typically dominated by noise from existing equipment on-site, vehicular traffic around the facilities, and trucks entering and exiting facility premises. Large, potentially noise-intensive construction equipment would be needed temporarily to build new or modify existing enclosures and install new or modify existing air pollution control equipment as part of implementation of PR 1430. Operation of the construction equipment would be expected to comply with all existing noise control laws and ordinances. Since the facilities are located in industrial and commercial areas, which have a higher background noise level when compared to other areas, the noise generated during construction will likely be indistinguishable from the background noise levels at the property line.

Once the construction of the enclosures is complete, the outdoor noise from the metal grinding and metal cutting activities will be located within the enclosures as required by PR 1430. Thus, the existing noise from these activities is expected to be lessened compared to what is currently being generated on-site. Similarly, for any facility that installs new air pollution control devices such as baghouses and/or HEPA filters, substantial amounts of noise are not typically produced by these types of devices. Due to the attenuation rate of noise based on distance from the source, it is unlikely that noise levels exceeding local noise ordinances from operation new air pollution control equipment would occur beyond a facility's boundaries. Furthermore, OSHA and CAL-OSHA have established noise standards to protect worker health. Furthermore, compliance with local noise ordinances limiting the hours of construction will reduce the temporary noise impacts from construction to sensitive receptors. These potential noise increases are expected to be within the allowable noise levels established by the local noise ordinances for industrial areas, and thus are expected to be less than significant.

XII. d) Less than Significant Impact. One of the affected facilities, Continental Forge, is located within two miles northeast of the Compton Airport but it is not located within the airport runway safety areas, airport runway protection zones, or within a transitional surface area which is required to be free of all obstructions[15]. However, compliance with PR 1430 would not expose people residing or working in the vicinity of Continental Forge to the same degree of excessive noise levels associated with airplanes because all noise producing equipment at Continental Forge, as well as at all the other affected facilities, must comply with local noise ordinances and applicable OSHA or CAL-OSHA workplace noise reduction requirements. Therefore, the impacts are expected to be less than significant.

Conclusion

Based upon these considerations, significant adverse noise impacts are not expected from the implementing PR 1430. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

[15] Compton Airport Master Plan Report, County of Los Angeles, Compton, California, August 1991.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIII.	**POPULATION AND HOUSING.** Would the project:				
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)?	☐	☐	☐	☑
b)	Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XIII. a) No Impact. The construction activities associated with PR 1430 at each affected facility are not expected to involve the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. On a peak day, the analysis assumes up to 15 workers may be needed to perform construction activities to comply with PR 1430 at each affected facility and these workers can be supplied from the existing labor pool in the local Southern California area. Further, it is not expected that the installation of new or the modification of existing buildings and air pollution control equipment would require new employees to operate and maintain the equipment because several of the facilities already have existing air pollution control equipment in place with personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PR 1430. As a result, PR 1430 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution.

XIII. b) No Impact. PR 1430 affects operations at existing metal forging facilities and as previously explained in Section III – Air Quality, SCAQMD staff is not aware of any new metal forging facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Thus, PR 1430 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly or cause the displacement of substantial numbers of people that would induce the construction of replacement housing elsewhere in the District. .

Conclusion

Based upon these considerations, significant adverse population and housing impacts are not expected from implementing PR 1430. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	**Less Than Significant With Mitigation**	**Less Than Significant Impact**	**No Impact**
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:				
a) Fire protection?	☐	☐	☑	☐
b) Police protection?	☐	☐	☑	☐
c) Schools?	☐	☐	☐	☑
d) Other public facilities?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XIV. a) & b) Less Than Significant Impact. Implementation of PR 1430 is expected to cause facility operators to install new or modify existing buildings and air pollution control devices, all the while continuing current operations at existing affected facilities. New safety hazards are not expected to occur during construction because the construction activities would not involve the use or handling of hazardous materials. The metal PM to be captured by the air pollution control devices, once they become operational, may be explosive in nature. Thus, the design of the air pollution control equipment will need to conform to the National Fire Protection Association standards which have special designations for deflagrations (e.g., explosion prevention) from metal dust. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design*, 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

The increased use of air pollution control equipment, housekeeping and maintenance activities, or the temporary use of construction worker vehicles and delivery trucks would not be expected to substantially alter or increase the need or demand for additional public services (e.g., fire and police departments and related emergency services, et cetera) above current levels, so no significant impact to these existing services is anticipated.

XIV. c) No Impact. As noted in the previous "Population and Housing" discussion, PR 1430 is not expected to induce population growth in any way because the local labor pool (e.g., workforce) is expected to be sufficient to accommodate 15 construction workers to perform any construction activities that may be necessary at affected facilities and operation of new or modified air pollution control equipment is not expected to require additional employees. Even in the event that new employees are hired, it is expected that the number of new employees at any one facility would be small, no more than one or two per facility. Therefore, with no significant increase in local population, no impacts would be expected to local schools.

XIV. d) No Impact. PR 1430 is expected to result in the construction of enclosures and the installation and use of new or modified air pollution control equipment. Besides obtaining building permits from the local agency and SCAQMD permits for installing air pollution control equipment, there is no need for other types of government services. PR 1430 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. As explained earlier, there will be no substantive increase in population as a result of implementing PR 1430, and, therefore, no need for physically altered government facilities.

Conclusion

Based upon these considerations, significant adverse public services impacts are not expected from implementing PR 1430. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION.				
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XV. a) & b) No Impact. As explained previously in Section XIII - Population and Housing," the operators of affected facilities who need to perform any construction activities to comply with PR 1430 can draw from the existing labor pool in the local Southern California area. Further, it is not expected that the installation of new or the modification of existing buildings and air pollution control equipment would require new employees to operate and maintain the equipment because several of the facilities already have existing air pollution control equipment in place with

personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PR 1430. As a result, PR 1430 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution. Further, there are no provisions in PR 1430 that would affect or increase the demand for or use of existing neighborhood and regional parks or other recreational facilities. Further PR 1430 would not require the construction of new or the expansion of existing recreational facilities that might, in turn, cause adverse physical effects on the environment because PR 1430 will not directly or indirectly substantively increase or redistribute population.

Conclusion

Based upon these considerations, significant adverse recreation impacts are not expected from implementing PR 1430. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVI. SOLID AND HAZARDOUS WASTE. Would the project:				
a) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑	☐
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☐	☑

Significance Criteria

The proposed project impacts on solid and 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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XVI. a) Less than Significant Impact. 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. This analysis of solid waste impacts assumes that safety and disposal procedures required by various agencies in California will provide reasonable precautions against the improper disposal of hazardous wastes in a municipal waste landfill. Because of state and federal requirements, some facilities are attempting to reduce or minimize the generation of solid and hazardous wastes by incorporating source reduction technologies to reduce the volume or toxicity of wastes generated, including improving operating procedures, using less hazardous or nonhazardous substitute materials, and upgrading or replacing inefficient processes.

PR 1430 would require the installation of new or the modification of existing buildings, total enclosures, and air pollution control equipment. In the worst case, the analysis assumes that five existing buildings will be demolished, 600 cubic yards of soil for one building and 300 cubic yards of soil for each of the four buildings will need to be imported and exported. IN addition, 26 existing baghouses will be demolished creating 640 cubic yards of solid waste per baghouse. In total, up to 18,440 cubic yards of solid waste is estimated to be generated during construction.

In addition, the operation of air pollution control equipment such as baghouses and/or HEPA filters could generate solid waste from the collection of metal PM and from the replacement of torn bags and spent filters in the baghouses and HEPA systems, respectively.

Filtration includes usage of baghouse and/or HEPA filters. Mixed metal compounds could be captured with the use of filtration controls at a 99.9 percent control rate. Currently, each affected facility sends their metal materials for recycling or disposal at a hazardous waste landfill. Based on the number of air pollution control equipment that may be needed at the affected facilities, the analysis shows that spent filters, torn bags, and waste collected by the baghouses may generate up to 16,640 cubic yards per year of hazardous waste.

The estimated solid waste from these activities is summarized in Table 2-12.

Table 2-12
Total Solid Waste Generation

Control Type	Potential Number of Affected Units	Total Waste Generated (cubic yards)
Demolition of existing old baghouses and foundation	26	18,440 (construction phase: one-time only)
Demolition of buildings	5	
Disposal of Torn Bags and Spent Filters	26	640 (each) 16,640 (total, worst-case, per year)

The nearest RCRA landfills are Republic Services and US Ecology. The Republic Services La Paz County Landfill has approximately 20,000,000 cubic yards of capacity remaining for the 50 year life expectancy (400,000 cubic yards per year). The US Ecology, Inc., facility in Beatty, Nevada has approximately 638,858 cubic yards of capacity remaining for the three year life expectancy (212,952 cubic yards per year). US Ecology, Inc., currently receives approximately 18,000 cubic yards per year of waste, so 194,952 cubic yards per year (212,952 cubic yards per year – 18,000 cubic yards per year) would be available should any of the affected facilities elect to dispose of their hazardous materials at this facility.

With a disposal of 16,640 cubic yards per year of filters, baghouse fabrics, and metals, the total solid and hazardous waste impacts from PR 1430 are conservatively estimated at 4 percent and 8.5 percent of the available Republic Services and US Ecology landfill capacity, respectively. Thus, the amount of hazardous waste that may be generated by the proposed project is relatively small, would not be considered to create a significant demand on existing landfill capacity, and would not likely require new RCRA landfills to be built.

Finally, all new enclosures and air pollution control equipment are expected to be installed within the currently developed footprint at already existing facilities. Because the newly installed control equipment has a finite lifetime (approximately 20 years), it will ultimately have to be replaced at the end of its useful life. Affected equipment may be refurbished and used elsewhere or the scrap metal or other materials from replaced units has economic value and is expected to be recycled, so any solid or hazardous waste impacts specifically associated with the proposed project are expected to be minor. As a result, no substantial change in the amount or character of solid or hazardous waste streams is expected to occur.

Because the waste disposal needs that will occur from implementing PR 1430 are expected to be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs, potential solid and hazardous waste impacts from implementing PR 1430 would not be significant.

XVI. b) No Impact. It is assumed that facility operators at the facilities currently comply with all applicable local, state, or federal waste disposal regulations and PR 1430 does not contain any provisions that would alter current practices. Thus, implementation of PR 1430 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations in a manner that would cause a significant adverse solid and hazardous waste impact.

Conclusion

Based upon these considerations, significant adverse solid and hazardous waste impacts are not expected from implementing PR 1430. Since no significant solid and hazardous waste impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVII.	**TRANSPORTATION AND TRAFFIC.** 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?	☐	☐	☑	☐
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?	☐	☐	☑	☐
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?	☐	☐	☐	☑
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☑
e)	Result in inadequate emergency access?	☐	☐	☐	☑
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?	☐	☐	☐	☑

Significance Criteria

Impacts on transportation and 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

PR 1430 will reduce toxic emissions, PM emissions, and odors from metal grinding and metal cutting operations at metal forging facilities by implementing PM air pollution control. Facilities affected by PR 1430 are located in existing industrial, commercial or mixed land use areas. PR 1430 would require the construction of total enclosures, the replacement of existing or the installation of new air pollution control devices, the installation of a BLDS (as applicable), and the implementation of housekeeping and maintenance activity requirements, such as wet cleaning or vacuuming.

XVII. a) & b) Less Than Significant Impact

Construction

As previously discussed in Section III - Air Quality and Greenhouse Gas Emissions, compliance with PR 1430 may require construction activities associated with installing new buildings, total enclosures with or without ventilation to create negative air conditions, and air pollution control equipment. Approximately 36 delivery and/or disposal trucks plus 15 construction worker trips for a total of 51 construction round trips are assumed to be needed on a peak construction day for five facilities with overlapping construction schedules. Thus, construction is not expected to affect on-site traffic or parking for each affected facility. Further, since the additional 51 construction round trips that may occur on a peak day are well below the significant threshold of 350 round

trips, traffic and transportation impacts during construction are not expected to cause a significance adverse impact.

Operation

Air pollution control equipment used to comply with PR 1430 will collect toxic PM waste products from metal grinding and metal cutting activities, as well as dry solids from spent filters and torn bags. These wastes will need to be transported off-site from each facility to either disposal or recycling facilities. In addition, fresh filters will be needed to replace the spent filters and these will need to be delivered to each facility. Similarly, fresh bags will be needed to replace torn bags and these will also need to be delivered to each facility as needed. Finally, since all of the affected facilities will be required to conduct source tests to comply with PR 1430, workers needed to conduct the source tests will also generate trips. All of the trips need to haul wastes and deliver supplies as well as conduct source tests will contribute to operational traffic and transportation impacts.

For a "worst case" analysis, SCAQMD staff assumed that for the 22 facilities on a peak day would generate a maximum of 44 new truck trips (round trips) during operation to haul away collected waste, to account for worker trips needed to conduct source testing, and to inspect, replace and dispose of filters. While these truck trips are assumed to overlap on a given day, the 44 round trips that may occur are not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near each of the affected facilities. In fact, this low volume of additional daily truck traffic is negligible over the entire District. Further, as previously explained in Section XII – Population and Housing, the installation of new or the modification of existing buildings and air pollution control equipment would not be expected to require new, additional permanent employees to operate and maintain the equipment because several of the facilities already have existing air pollution control equipment in place with personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. Thus, even for the trips that would be associated with employing a small amount of new workers at each affected facility, implementation of PR 1430 is not expected to cause a significant increase in the number of worker trips during operation at any of the affected facilities. The estimated vehicles from all activities is summarized in Table 2-13.

Table 2-13
Estimation of Vehicle Trips

Phase	Worker Vehicles	Delivery/Disposal Trucks
Construction [a]	15 per day	36 per day
Operation	Up to 4 additional vehicles per facility for a maximum of 44 vehicles per day[b]	

[a] The worst case analysis for construction is based on a maximum of 15 worker vehicles plus 36 delivery/disposal trucks per day at five facilities during a peak day to account for overlapping construction.

[b] The worst case analysis during operation is based on a maximum of 44 truck trips (round-trips) for the additional source testing, worker vehicles, filter/bag replacement or inspection, and disposal at 11 facilities overlapping during operation.

XVII. c) No Impact. As explained previously in Section XII – Noise, only one of the affected facilities, Continental Forge, is located within two miles of an airport (Compton Airport) but it is not located within the airport runway safety areas, airport runway protection zones, or within a transitional surface area which is required to be free of all obstructions[16]. Thus, compliance with PR 1430 would not 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 risk

XVII. d) & e) No Impact. PR 1430 does not involve or require the construction of new roadways because the focus of PR 1430 is on controlling toxic and PM emissions from existing metal forging facilities that conduct metal grinding and metal cutting operations. Thus, there will no change to current public roadway designs that could increase traffic hazards. Further, PR 1430 is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the facilities. Emergency access at each of the affected facilities is not expected to be impacted because PR 1430 does not contain any requirements specific to emergency access points and each affected facility is expected to continue to maintain their existing emergency access. Further, the total enclosure requirements in PR 1430 do not contain any specifications relative to any facility's emergency access. Since PR 1430 is expected to involve short-term construction activities that would create new, minor delivery/haul truck trips that would be expected to cease after construction is completed, the proposed project is not expected to alter the existing long-term circulation patterns within the areas of each affected facility during construction. Similarly, during operation, the projected increase of additional vehicle trips that may be needed at each affected facility would be at less than significant levels individually and cumulatively such that implementation of 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 during construction or operation.

XVII. f) No Impact. PR 1430 does not contain any requirements that would affect or alter adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Further, the 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) that exist in their respective cities. Since all of the requirements and compliance activities associated with implementing PR 1430 would be expected to occur on-site, PR 1430 would have no impact on each facility's ability to comply with any applicable alternative transportation plans or policies.

Conclusion

Based upon these considerations, significant adverse transportation and traffic impacts are not expected from implementing PR 1430. Since no significant transportation and traffic impacts were identified, no mitigation measures are necessary or required.

[16] Compton Airport Master Plan Report, County of Los Angeles, Compton, California, August 1991.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
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?	☐	☐	☐	☑
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)	☐	☐	☑	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

XVIII. a) No Impact. As explained in Section IV - Biological Resources, PR 1430 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 the facilities 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. For these reasons, PR 1430 is not expected to reduce or eliminate any plant or animal species or destroy prehistoric records of the past.

XVIII. b) Less Than Significant Impact. Based on the foregoing analyses, PR 1430 would not result in significant adverse project-specific environmental impacts. Potential adverse impacts from implementing PR 1430 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 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. SCAQMD cumulative significant thresholds are the same as project-specific significance thresholds.

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 SCAQMD'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 SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD 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 SCAQMD's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, the implementation of PR 1430 will not cause a significant unavoidable cumulative impact.

Therefore, there is no potential for significant adverse cumulative or cumulatively considerable impacts to be generated by PR 1430 for any environmental topic.

XVIII. c) Less Than Significant Impact. Based on the foregoing analyses, PR 1430 is not expected to cause adverse effects on human beings for any environmental topic, either directly or indirectly because: 1) the air quality and GHG impacts were determined to be less than the significance thresholds as analyzed in Section III – Air Quality and Greenhouse Gases; 2) the increased demand for energy, water, and solid waste disposal, can be met by utilizing existing services as analyzed in Section VI - Energy, Section IX - Hydrology and Water Quality, and Section XVI – Solid and Hazardous Waste; 3) the hazards and hazardous materials impacts were determined to be less than significant as analyzed in Section VIII – Hazards and Hazardous Materials; 4) the noise impacts were determined to be less than significant as analyzed in Section XII – Noise; and, 5) the transportation and traffic impacts were determined to be less than the significance thresholds as analyzed in Section XVI – Transportation and Traffic. In addition, the analysis concluded that there would be no significant environmental impacts for the remaining environmental impact topic areas: aesthetics, agriculture and forestry resources, biological resources, cultural resources, geology and soils, land use and planning, mineral resources, population and housing, public services, and recreation.

Conclusion

As previously discussed in environmental topics I through XVIII, the proposed project has no potential to cause significant adverse environmental effects. Since no mitigation measures are necessary or required.

APPENDICES

Appendix A: Proposed Rule 1430 - Control of Emissions From Metal Grinding Operations at Metal Forging Facilities

Appendix B: Assumptions and Calculations

B-1: CalEEMod Files and Assumptions

Scenario 1 - New Building Construction (Summer)

Scenario 1 - New Building Construction (Winter)

Scenario 1 - New Building Construction (Annual)

Scenario 2 - New Baghouse/HEPA Installation (Summer)

Scenario 2 - New Baghouse/HEPA Installation (Winter)

Scenario 2 - New Baghouse/HEPA Installation (Annual)

Scenario 3 - Building Improvement For Total Enclosure (Summer)

Scenario 3 - Building Improvement For Total Enclosure (Winter)

Scenario 3 - Building Improvement For Total Enclosure (Annual)

B-2: Construction Emissions Summary and Calculations

B-3: Operational Emissions and Calculations

Appendix C: List of Affected Facilities

Appendix D: References, Organizations and Persons Consulted

Appendix E: Comment Letters Received on the Draft EA and Responses to Comments

APPENDIX A

PROPOSED RULE 1430 – CONTROL OF EMISSIONS FROM METAL GRINDING OPERATIONS AT METAL FORGING FACILITIES

In order to save space and avoid repetition, please refer to the latest version of Proposed Rule 1430 located elsewhere in the Governing Board Package. The version of Proposed Rule 1430 that was circulated with the Draft EA and released on January 11, 2017 for a 30-day public review and comment period ending on February 10, 2017 was identified as "PR 1430 December 16, 2016."

Original hard copies of the Draft EA, which include the draft version of the proposed rule listed above, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by contacting Fabian Wesson, Public Advisor at the SCAQMD's Public Information Center by phone at (909) 396-2432 or by email at PICrequests@aqmd.gov.

APPENDIX B

ASSUMPTIONS AND CALCULATIONS

APPENDIX B-1

CalEEMod Files and Assumptions

CalEEMod Files and Assumptions

Scenario 1 - New Building Construction (Summer)

R1430_Press Forge_20161220

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	5.74	1000sqft	0.13	5,736.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

R1430_Press Forge_20161220 - South Coast AQMD Air District, Summer

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 5736 sq ft

Construction Phase - assumptions: 5 days grading (including soil and demolition material hauling), 52 days of building construction, 10 day for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Off-road Equipment - default equipment, hp, LF. assume two equipment for each for paving. Each operate 4 hrs

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - defalut

Off-road Equipment - assumption

Off-road Equipment - assumption

Off-road Equipment - assumptions based on the equipment data (unit amount and hr/day) used in previous EA for R1155, use default hp and LF, assume 8 hr operation time

Trips and VMT - assumptions

Demolition - assume 5000 sq ft of building demo, 4000 sq ft for 4 baghouses and 4000 sq ft for 4 baghouse foundation

Grading - assume 600 cu yard soil import and export

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	52.00
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	MaterialExported	0.00	600.00
tblGrading	MaterialImported	0.00	600.00
tblLandUse	BuildingSpaceSquareFeet	5,740.00	5,736.00
tblLandUse	LandUseSquareFeet	5,740.00	5,736.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets

tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.4139	12.1369	8.7939	0.0152	0.6442	0.8169	1.4611	0.1152	0.7796	0.8948	0.0000	1,518.0742	1,518.0742	0.2570	0.0000	1,524.4995
2017	1.9692	20.5310	10.3240	0.0373	1.4159	0.9321	2.2025	0.5912	0.8919	1.3414	0.0000	3,895.6656	3,895.6656	0.4172	0.0000	3,906.0956
Maximum	**1.9692**	**20.5310**	**10.3240**	**0.0373**	**1.4159**	**0.9321**	**2.2025**	**0.5912**	**0.8919**	**1.3414**	**0.0000**	**3,895.6656**	**3,895.6656**	**0.4172**	**0.0000**	**3,906.0956**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.4139	12.1369	8.7939	0.0152	0.6442	0.8169	1.4611	0.1152	0.7796	0.8948	0.0000	1,518.0742	1,518.0742	0.2570	0.0000	1,524.4995
2017	1.9692	20.5310	10.3240	0.0373	1.4159	0.9321	2.2025	0.5912	0.8919	1.3414	0.0000	3,895.6656	3,895.6656	0.4172	0.0000	3,906.0956
Maximum	**1.9692**	**20.5310**	**10.3240**	**0.0373**	**1.4159**	**0.9321**	**2.2025**	**0.5912**	**0.8919**	**1.3414**	**0.0000**	**3,895.6656**	**3,895.6656**	**0.4172**	**0.0000**	**3,906.0956**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Energy	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Mobile	0.0291	0.1419	0.4299	1.2000e-003	0.0879	1.5600e-003	0.0895	0.0235	1.4800e-003	0.0250		121.7004	121.7004	6.8600e-003		121.8718
Total	**0.1574**	**0.1433**	**0.4316**	**1.2100e-003**	**0.0879**	**1.6600e-003**	**0.0896**	**0.0235**	**1.5800e-003**	**0.0251**		**123.3101**	**123.3101**	**6.8900e-003**	**3.0000e-005**	**123.4912**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Energy	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Mobile	0.0291	0.1419	0.4299	1.2000e-003	0.0879	1.5600e-003	0.0895	0.0235	1.4800e-003	0.0250		121.7004	121.7004	6.8600e-003		121.8718
Total	**0.1574**	**0.1433**	**0.4316**	**1.2100e-003**	**0.0879**	**1.6600e-003**	**0.0896**	**0.0235**	**1.5800e-003**	**0.0251**		**123.3101**	**123.3101**	**6.8900e-003**	**3.0000e-005**	**123.4912**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2016	12/14/2016	5	10	
2	old baghouse demo	Demolition	12/15/2016	12/28/2016	5	10	
3	old baghouse foundation demo	Demolition	12/29/2016	1/11/2017	5	10	
4	Grading	Grading	1/12/2017	1/18/2017	5	5	
5	Building Construction	Building Construction	1/19/2017	3/31/2017	5	52	
6	building paving	Paving	4/1/2017	4/7/2017	5	5	
7	baghouse pad paving	Paving	4/8/2017	4/21/2017	5	10	
8	baghouse installation	Building Construction	4/22/2017	5/5/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
building paving	Cement and Mortar Mixers	4	6.00	9	0.56
building paving	Pavers	1	7.00	130	0.42

building paving	Rollers	1	7.00	80	0.38
building paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
baghouse pad paving	Cement and Mortar Mixers	2	4.00	9	0.56
baghouse pad paving	Pavers	2	4.00	130	0.42
baghouse pad paving	Rollers	2	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	2	4.00	97	0.37
baghouse installation	Cranes	2	4.00	231	0.29
baghouse installation	Forklifts	2	4.00	89	0.20
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Generator Sets	2	4.00	84	0.74
baghouse installation	Welders	2	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
building paving	7	18.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	23.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	8	20.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	8	2.00	1.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4922	0.0000	0.4922	0.0745	0.0000	0.0745			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.4922**	**0.8093**	**1.3015**	**0.0745**	**0.7723**	**0.8469**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0279	0.8400	0.1580	1.8600e-003	0.0402	6.6700e-003	0.0469	0.0110	6.3800e-003	0.0174		200.1954	200.1954	0.0144		200.5543
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0962**	**0.8909**	**0.8052**	**3.1600e-003**	**0.1520**	**7.6300e-003**	**0.1596**	**0.0407**	**7.2700e-003**	**0.0479**		**328.9234**	**328.9234**	**0.0197**		**329.4167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4922	0.0000	0.4922	0.0745	0.0000	0.0745			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.4922**	**0.8093**	**1.3015**	**0.0745**	**0.7723**	**0.8469**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0279	0.8400	0.1580	1.8600e-003	0.0402	6.6700e-003	0.0469	0.0110	6.3800e-003	0.0174		200.1954	200.1954	0.0144		200.5543
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0962**	**0.8909**	**0.8052**	**3.1600e-003**	**0.1520**	**7.6300e-003**	**0.1596**	**0.0407**	**7.2700e-003**	**0.0479**		**328.9234**	**328.9234**	**0.0197**		**329.4167**

3.3 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.3 old baghouse demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7100e-003	0.2922	0.0550	6.5000e-004	0.0140	2.3200e-003	0.0163	3.8300e-003	2.2200e-003	6.0500e-003		69.6332	69.6332	4.9900e-003		69.7580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0780**	**0.3430**	**0.7022**	**1.9500e-003**	**0.1258**	**3.2800e-003**	**0.1290**	**0.0335**	**3.1100e-003**	**0.0366**		**198.3612**	**198.3612**	**0.0104**		**198.6203**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.3 old baghouse demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7100e-003	0.2922	0.0550	6.5000e-004	0.0140	2.3200e-003	0.0163	3.8300e-003	2.2200e-003	6.0500e-003		69.6332	69.6332	4.9900e-003		69.7580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0780**	**0.3430**	**0.7022**	**1.9500e-003**	**0.1258**	**3.2800e-003**	**0.1290**	**0.0335**	**3.1100e-003**	**0.0366**		**198.3612**	**198.3612**	**0.0104**		**198.6203**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7100e-003	0.2922	0.0550	6.5000e-004	0.0563	2.3200e-003	0.0586	0.0142	2.2200e-003	0.0164		69.6332	69.6332	4.9900e-003		69.7580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0780**	**0.3430**	**0.7022**	**1.9500e-003**	**0.1681**	**3.2800e-003**	**0.1714**	**0.0439**	**3.1100e-003**	**0.0470**		**198.3612**	**198.3612**	**0.0104**		**198.6203**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.4 old baghouse foundation demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.7100e-003	0.2922	0.0550	6.5000e-004	0.0563	2.3200e-003	0.0586	0.0142	2.2200e-003	0.0164		69.6332	69.6332	4.9900e-003		69.7580
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0780**	**0.3430**	**0.7022**	**1.9500e-003**	**0.1681**	**3.2800e-003**	**0.1714**	**0.0439**	**3.1100e-003**	**0.0470**		**198.3612**	**198.3612**	**0.0104**		**198.6203**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978		1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.3937**	**0.7318**	**1.1255**	**0.0596**	**0.6978**	**0.7574**		**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0166	1.4400e-003	0.0181	4.4800e-003	1.3700e-003	5.8600e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.0685**	**0.3107**	**0.6189**	**1.9000e-003**	**0.1284**	**2.3600e-003**	**0.1308**	**0.0341**	**2.2200e-003**	**0.0364**		**194.5264**	**194.5264**	**9.5500e-003**		**194.7649**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978	0.0000	1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.3937**	**0.7318**	**1.1255**	**0.0596**	**0.6978**	**0.7574**	**0.0000**	**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.4 old baghouse foundation demo - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0166	1.4400e-003	0.0181	4.4800e-003	1.3700e-003	5.8600e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.0685**	**0.3107**	**0.6189**	**1.9000e-003**	**0.1284**	**2.3600e-003**	**0.1308**	**0.0341**	**2.2200e-003**	**0.0364**		**194.5264**	**194.5264**	**9.5500e-003**		**194.7649**

3.5 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7799	0.0000	0.7799	0.4179	0.0000	0.4179			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978		1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.7799**	**0.7318**	**1.5117**	**0.4179**	**0.6978**	**1.1156**		**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.5 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2989	9.9888	1.8358	0.0241	0.5243	0.0539	0.5782	0.1437	0.0516	0.1952		2,590.9230	2,590.9230	0.1806		2,595.4377
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.3594**	**10.0331**	**2.4058**	**0.0253**	**0.6360**	**0.0548**	**0.6909**	**0.1733**	**0.0524**	**0.2257**		**2,716.3581**	**2,716.3581**	**0.1853**		**2,720.9909**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7799	0.0000	0.7799	0.4179	0.0000	0.4179			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978	0.0000	1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.7799**	**0.7318**	**1.5117**	**0.4179**	**0.6978**	**1.1156**	**0.0000**	**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.5 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2989	9.9888	1.8358	0.0241	0.5243	0.0539	0.5782	0.1437	0.0516	0.1952		2,590.9230	2,590.9230	0.1806		2,595.4377
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0605	0.0443	0.5699	1.2600e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		125.4351	125.4351	4.7300e-003		125.5533
Total	**0.3594**	**10.0331**	**2.4058**	**0.0253**	**0.6360**	**0.0548**	**0.6909**	**0.1733**	**0.0524**	**0.2257**		**2,716.3581**	**2,716.3581**	**0.1853**		**2,720.9909**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904		1,165.9164	1,165.9164	0.3572		1,174.8473
Total	**1.2812**	**12.7589**	**8.0700**	**0.0114**		**0.8591**	**0.8591**		**0.7904**	**0.7904**		**1,165.9164**	**1,165.9164**	**0.3572**		**1,174.8473**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9200e-003	0.0640	0.0118	1.5000e-004	3.3600e-003	3.5000e-004	3.7100e-003	9.2000e-004	3.3000e-004	1.2500e-003		16.6085	16.6085	1.1600e-003		16.6374
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0121	8.8700e-003	0.1140	2.5000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		25.0870	25.0870	9.5000e-004		25.1107
Total	**0.0189**	**0.2020**	**0.1593**	**6.6000e-004**	**0.0321**	**1.6500e-003**	**0.0338**	**8.6900e-003**	**1.5700e-003**	**0.0103**		**69.6401**	**69.6401**	**4.1100e-003**		**69.7427**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904	0.0000	1,165.9164	1,165.9164	0.3572		1,174.8473
Total	**1.2812**	**12.7589**	**8.0700**	**0.0114**		**0.8591**	**0.8591**		**0.7904**	**0.7904**	**0.0000**	**1,165.9164**	**1,165.9164**	**0.3572**		**1,174.8473**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9200e-003	0.0640	0.0118	1.5000e-004	3.3600e-003	3.5000e-004	3.7100e-003	9.2000e-004	3.3000e-004	1.2500e-003		16.6085	16.6085	1.1600e-003		16.6374
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0121	8.8700e-003	0.1140	2.5000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		25.0870	25.0870	9.5000e-004		25.1107
Total	**0.0189**	**0.2020**	**0.1593**	**6.6000e-004**	**0.0321**	**1.6500e-003**	**0.0338**	**8.6900e-003**	**1.5700e-003**	**0.0103**		**69.6401**	**69.6401**	**4.1100e-003**		**69.7427**

3.7 building paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636		1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0532**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**		**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

3.7 building paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1090	0.0798	1.0259	2.2700e-003	0.2012	1.6600e-003	0.2029	0.0534	1.5300e-003	0.0549		225.7832	225.7832	8.5100e-003		225.9959
Total	**0.1169**	**0.3462**	**1.0748**	**2.9100e-003**	**0.2152**	**3.1000e-003**	**0.2183**	**0.0572**	**2.9000e-003**	**0.0601**		**294.8745**	**294.8745**	**0.0133**		**295.2075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636	0.0000	1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0532**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**	**0.0000**	**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

3.7 building paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1090	0.0798	1.0259	2.2700e-003	0.2012	1.6600e-003	0.2029	0.0534	1.5300e-003	0.0549		225.7832	225.7832	8.5100e-003		225.9959
Total	**0.1169**	**0.3462**	**1.0748**	**2.9100e-003**	**0.2152**	**3.1000e-003**	**0.2183**	**0.0572**	**2.9000e-003**	**0.0601**		**294.8745**	**294.8745**	**0.0133**		**295.2075**

3.8 baghouse pad paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0610	10.5057	7.6425	0.0111		0.6601	0.6601		0.6084	0.6084		1,117.4400	1,117.4400	0.3322		1,125.7437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0610**	**10.5057**	**7.6425**	**0.0111**		**0.6601**	**0.6601**		**0.6084**	**0.6084**		**1,117.4400**	**1,117.4400**	**0.3322**		**1,125.7437**

3.8 baghouse pad paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1211	0.0887	1.1399	2.5200e-003	0.2236	1.8400e-003	0.2254	0.0593	1.7000e-003	0.0610		250.8703	250.8703	9.4500e-003		251.1065
Total	**0.1291**	**0.3550**	**1.1888**	**3.1600e-003**	**0.2375**	**3.2800e-003**	**0.2408**	**0.0631**	**3.0700e-003**	**0.0662**		**319.9615**	**319.9615**	**0.0143**		**320.3182**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0610	10.5057	7.6425	0.0111		0.6601	0.6601		0.6084	0.6084	0.0000	1,117.4400	1,117.4400	0.3322		1,125.7437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0610**	**10.5057**	**7.6425**	**0.0111**		**0.6601**	**0.6601**		**0.6084**	**0.6084**	**0.0000**	**1,117.4400**	**1,117.4400**	**0.3322**		**1,125.7437**

3.8 baghouse pad paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1211	0.0887	1.1399	2.5200e-003	0.2236	1.8400e-003	0.2254	0.0593	1.7000e-003	0.0610		250.8703	250.8703	9.4500e-003		251.1065
Total	**0.1291**	**0.3550**	**1.1888**	**3.1600e-003**	**0.2375**	**3.2800e-003**	**0.2408**	**0.0631**	**3.0700e-003**	**0.0662**		**319.9615**	**319.9615**	**0.0143**		**320.3182**

3.9 baghouse installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9443	15.8945	9.7526	0.0164		0.9294	0.9294		0.8893	0.8893		1,576.7758	1,576.7758	0.3240		1,584.8756
Total	**1.9443**	**15.8945**	**9.7526**	**0.0164**		**0.9294**	**0.9294**		**0.8893**	**0.8893**		**1,576.7758**	**1,576.7758**	**0.3240**		**1,584.8756**

3.9 baghouse installation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0121	8.8700e-003	0.1140	2.5000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		25.0870	25.0870	9.5000e-004		25.1107
Total	**0.0249**	**0.4043**	**0.1965**	**1.1500e-003**	**0.0427**	**2.7400e-003**	**0.0455**	**0.0116**	**2.6100e-003**	**0.0142**		**122.1229**	**122.1229**	**7.7700e-003**		**122.3170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9443	15.8945	9.7526	0.0164		0.9294	0.9294		0.8893	0.8893	0.0000	1,576.7758	1,576.7758	0.3240		1,584.8756
Total	**1.9443**	**15.8945**	**9.7526**	**0.0164**		**0.9294**	**0.9294**		**0.8893**	**0.8893**	**0.0000**	**1,576.7758**	**1,576.7758**	**0.3240**		**1,584.8756**

3.9 baghouse installation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	7.9700e-003	0.2664	0.0490	6.4000e-004	0.0140	1.4400e-003	0.0154	3.8300e-003	1.3700e-003	5.2100e-003		69.0913	69.0913	4.8200e-003		69.2117
Vendor	4.8400e-003	0.1291	0.0336	2.6000e-004	6.4000e-003	1.1200e-003	7.5200e-003	1.8400e-003	1.0700e-003	2.9100e-003		27.9446	27.9446	2.0000e-003		27.9946
Worker	0.0121	8.8700e-003	0.1140	2.5000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		25.0870	25.0870	9.5000e-004		25.1107
Total	**0.0249**	**0.4043**	**0.1965**	**1.1500e-003**	**0.0427**	**2.7400e-003**	**0.0455**	**0.0116**	**2.6100e-003**	**0.0142**		**122.1229**	**122.1229**	**7.7700e-003**		**122.3170**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0291	0.1419	0.4299	1.2000e-003	0.0879	1.5600e-003	0.0895	0.0235	1.4800e-003	0.0250		121.7004	121.7004	6.8600e-003		121.8718
Unmitigated	0.0291	0.1419	0.4299	1.2000e-003	0.0879	1.5600e-003	0.0895	0.0235	1.4800e-003	0.0250		121.7004	121.7004	6.8600e-003		121.8718

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	9.64	9.64	9.64	41,328	41,328
Total	9.64	9.64	9.64	41,328	41,328

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
NaturalGas Unmitigated	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	13.6721	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Total		**1.5000e-004**	**1.3400e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6085**	**1.6085**	**3.0000e-005**	**3.0000e-005**	**1.6180**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.0136721	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Total		**1.5000e-004**	**1.3400e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6085**	**1.6085**	**3.0000e-005**	**3.0000e-005**	**1.6180**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Unmitigated	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Total	**0.1282**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2600e-003**	**1.2600e-003**	**0.0000**		**1.3400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Total	**0.1282**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2600e-003**	**1.2600e-003**	**0.0000**		**1.3400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 1 - New Building Construction (Winter)

R1430_Press Forge_20161220

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	5.74	1000sqft	0.13	5,736.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 5736 sq ft

Construction Phase - assumptions: 5 days grading (including soil and demolition material hauling), 52 days of building construction, 10 day for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Off-road Equipment - default equipment, hp, LF. assume two equipment for each for paving. Each operate 4 hrs

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - defalut

Off-road Equipment - assumption

Off-road Equipment - assumption

Off-road Equipment - assumptions based on the equipment data (unit amount and hr/day) used in previous EA for R1155, use default hp and LF, assume 8 hr operation time

Trips and VMT - assumptions

Demolition - assume 5000 sq ft of building demo, 4000 sq ft for 4 baghouses and 4000 sq ft for 4 baghouse foundation

Grading - assume 600 cu yard soil import and export

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	52.00
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	MaterialExported	0.00	600.00
tblGrading	MaterialImported	0.00	600.00
tblLandUse	BuildingSpaceSquareFeet	5,740.00	5,736.00
tblLandUse	LandUseSquareFeet	5,740.00	5,736.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets

tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.4205	12.1563	8.7503	0.0150	0.6442	0.8170	1.4612	0.1152	0.7797	0.8949	0.0000	1,506.5296	1,506.5296	0.2574	0.0000	1,512.9636
2017	1.9706	20.6875	10.4264	0.0368	1.4159	0.9322	2.2034	0.5912	0.8920	1.3422	0.0000	3,842.5890	3,842.5890	0.4254	0.0000	3,853.2226
Maximum	**1.9706**	**20.6875**	**10.4264**	**0.0368**	**1.4159**	**0.9322**	**2.2034**	**0.5912**	**0.8920**	**1.3422**	**0.0000**	**3,842.5890**	**3,842.5890**	**0.4254**	**0.0000**	**3,853.2226**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.4205	12.1563	8.7503	0.0150	0.6442	0.8170	1.4612	0.1152	0.7797	0.8949	0.0000	1,506.5296	1,506.5296	0.2574	0.0000	1,512.9636
2017	1.9706	20.6875	10.4264	0.0368	1.4159	0.9322	2.2034	0.5912	0.8920	1.3422	0.0000	3,842.5890	3,842.5890	0.4254	0.0000	3,853.2226
Maximum	**1.9706**	**20.6875**	**10.4264**	**0.0368**	**1.4159**	**0.9322**	**2.2034**	**0.5912**	**0.8920**	**1.3422**	**0.0000**	**3,842.5890**	**3,842.5890**	**0.4254**	**0.0000**	**3,853.2226**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Energy	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Mobile	0.0280	0.1467	0.4006	1.1400e-003	0.0879	1.5700e-003	0.0895	0.0235	1.4800e-003	0.0250		115.2127	115.2127	6.7700e-003		115.3820
Total	**0.1563**	**0.1481**	**0.4023**	**1.1500e-003**	**0.0879**	**1.6700e-003**	**0.0896**	**0.0235**	**1.5800e-003**	**0.0251**		**116.8224**	**116.8224**	**6.8000e-003**	**3.0000e-005**	**117.0014**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Energy	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Mobile	0.0280	0.1467	0.4006	1.1400e-003	0.0879	1.5700e-003	0.0895	0.0235	1.4800e-003	0.0250		115.2127	115.2127	6.7700e-003		115.3820
Total	**0.1563**	**0.1481**	**0.4023**	**1.1500e-003**	**0.0879**	**1.6700e-003**	**0.0896**	**0.0235**	**1.5800e-003**	**0.0251**		**116.8224**	**116.8224**	**6.8000e-003**	**3.0000e-005**	**117.0014**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2016	12/14/2016	5	10	
2	old baghouse demo	Demolition	12/15/2016	12/28/2016	5	10	
3	old baghouse foundation demo	Demolition	12/29/2016	1/11/2017	5	10	
4	Grading	Grading	1/12/2017	1/18/2017	5	5	
5	Building Construction	Building Construction	1/19/2017	3/31/2017	5	52	
6	building paving	Paving	4/1/2017	4/7/2017	5	5	
7	baghouse pad paving	Paving	4/8/2017	4/21/2017	5	10	
8	baghouse installation	Building Construction	4/22/2017	5/5/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
building paving	Cement and Mortar Mixers	4	6.00	9	0.56
building paving	Pavers	1	7.00	130	0.42

building paving	Rollers	1	7.00	80	0.38
building paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
baghouse pad paving	Cement and Mortar Mixers	2	4.00	9	0.56
baghouse pad paving	Pavers	2	4.00	130	0.42
baghouse pad paving	Rollers	2	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	2	4.00	97	0.37
baghouse installation	Cranes	2	4.00	231	0.29
baghouse installation	Forklifts	2	4.00	89	0.20
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Generator Sets	2	4.00	84	0.74
baghouse installation	Welders	2	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
building paving	7	18.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	23.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	8	20.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	8	2.00	1.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4922	0.0000	0.4922	0.0745	0.0000	0.0745			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.4922**	**0.8093**	**1.3015**	**0.0745**	**0.7723**	**0.8469**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0286	0.8545	0.1706	1.8300e-003	0.0402	6.7500e-003	0.0470	0.0110	6.4600e-003	0.0175		196.9042	196.9042	0.0150		197.2798
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.1028**	**0.9102**	**0.7616**	**3.0400e-003**	**0.1520**	**7.7100e-003**	**0.1597**	**0.0407**	**7.3500e-003**	**0.0480**		**317.3788**	**317.3788**	**0.0201**		**317.8808**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4922	0.0000	0.4922	0.0745	0.0000	0.0745			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.4922**	**0.8093**	**1.3015**	**0.0745**	**0.7723**	**0.8469**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0286	0.8545	0.1706	1.8300e-003	0.0402	6.7500e-003	0.0470	0.0110	6.4600e-003	0.0175		196.9042	196.9042	0.0150		197.2798
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.1028**	**0.9102**	**0.7616**	**3.0400e-003**	**0.1520**	**7.7100e-003**	**0.1597**	**0.0407**	**7.3500e-003**	**0.0480**		**317.3788**	**317.3788**	**0.0201**		**317.8808**

3.3 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.3 old baghouse demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.2972	0.0593	6.4000e-004	0.0140	2.3500e-003	0.0163	3.8300e-003	2.2500e-003	6.0800e-003		68.4884	68.4884	5.2300e-003		68.6191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0842**	**0.3529**	**0.6504**	**1.8500e-003**	**0.1258**	**3.3100e-003**	**0.1291**	**0.0335**	**3.1400e-003**	**0.0366**		**188.9630**	**188.9630**	**0.0103**		**189.2201**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.3 old baghouse demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.2972	0.0593	6.4000e-004	0.0140	2.3500e-003	0.0163	3.8300e-003	2.2500e-003	6.0800e-003		68.4884	68.4884	5.2300e-003		68.6191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0842**	**0.3529**	**0.6504**	**1.8500e-003**	**0.1258**	**3.3100e-003**	**0.1291**	**0.0335**	**3.1400e-003**	**0.0366**		**188.9630**	**188.9630**	**0.0103**		**189.2201**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.2972	0.0593	6.4000e-004	0.0563	2.3500e-003	0.0586	0.0142	2.2500e-003	0.0165		68.4884	68.4884	5.2300e-003		68.6191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0842**	**0.3529**	**0.6504**	**1.8500e-003**	**0.1681**	**3.3100e-003**	**0.1714**	**0.0439**	**3.1400e-003**	**0.0470**		**188.9630**	**188.9630**	**0.0103**		**189.2201**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.3937**	**0.8093**	**1.2030**	**0.0596**	**0.7723**	**0.8320**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

3.4 old baghouse foundation demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.2972	0.0593	6.4000e-004	0.0563	2.3500e-003	0.0586	0.0142	2.2500e-003	0.0165		68.4884	68.4884	5.2300e-003		68.6191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0842**	**0.3529**	**0.6504**	**1.8500e-003**	**0.1681**	**3.3100e-003**	**0.1714**	**0.0439**	**3.1400e-003**	**0.0470**		**188.9630**	**188.9630**	**0.0103**		**189.2201**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978		1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.3937**	**0.7318**	**1.1255**	**0.0596**	**0.6978**	**0.7574**		**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0166	1.4600e-003	0.0181	4.4800e-003	1.4000e-003	5.8800e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.0740**	**0.3190**	**0.5714**	**1.8100e-003**	**0.1284**	**2.3800e-003**	**0.1308**	**0.0341**	**2.2500e-003**	**0.0364**		**185.2559**	**185.2559**	**9.4800e-003**		**185.4928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3937	0.0000	0.3937	0.0596	0.0000	0.0596			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978	0.0000	1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.3937**	**0.7318**	**1.1255**	**0.0596**	**0.6978**	**0.7574**	**0.0000**	**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.4 old baghouse foundation demo - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0166	1.4600e-003	0.0181	4.4800e-003	1.4000e-003	5.8800e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.0740**	**0.3190**	**0.5714**	**1.8100e-003**	**0.1284**	**2.3800e-003**	**0.1308**	**0.0341**	**2.2500e-003**	**0.0364**		**185.2559**	**185.2559**	**9.4800e-003**		**185.4928**

3.5 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7799	0.0000	0.7799	0.4179	0.0000	0.4179			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978		1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.7799**	**0.7318**	**1.5117**	**0.4179**	**0.6978**	**1.1156**		**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.5 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3072	10.1411	1.9898	0.0237	0.5243	0.0547	0.5790	0.1437	0.0524	0.1961		2,545.9168	2,545.9168	0.1890		2,550.6422
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.3729**	**10.1897**	**2.5081**	**0.0248**	**0.6360**	**0.0557**	**0.6917**	**0.1733**	**0.0532**	**0.2265**		**2,663.2816**	**2,663.2816**	**0.1935**		**2,668.1179**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7799	0.0000	0.7799	0.4179	0.0000	0.4179			0.0000			0.0000
Off-Road	1.2100	10.4978	7.9182	0.0120		0.7318	0.7318		0.6978	0.6978	0.0000	1,179.3075	1,179.3075	0.2319		1,185.1047
Total	**1.2100**	**10.4978**	**7.9182**	**0.0120**	**0.7799**	**0.7318**	**1.5117**	**0.4179**	**0.6978**	**1.1156**	**0.0000**	**1,179.3075**	**1,179.3075**	**0.2319**		**1,185.1047**

3.5 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3072	10.1411	1.9898	0.0237	0.5243	0.0547	0.5790	0.1437	0.0524	0.1961		2,545.9168	2,545.9168	0.1890		2,550.6422
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0658	0.0486	0.5183	1.1800e-003	0.1118	9.2000e-004	0.1127	0.0296	8.5000e-004	0.0305		117.3648	117.3648	4.4400e-003		117.4757
Total	**0.3729**	**10.1897**	**2.5081**	**0.0248**	**0.6360**	**0.0557**	**0.6917**	**0.1733**	**0.0532**	**0.2265**		**2,663.2816**	**2,663.2816**	**0.1935**		**2,668.1179**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904		1,165.9164	1,165.9164	0.3572		1,174.8473
Total	**1.2812**	**12.7589**	**8.0700**	**0.0114**		**0.8591**	**0.8591**		**0.7904**	**0.7904**		**1,165.9164**	**1,165.9164**	**0.3572**		**1,174.8473**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9700e-003	0.0650	0.0128	1.5000e-004	3.3600e-003	3.5000e-004	3.7100e-003	9.2000e-004	3.4000e-004	1.2600e-003		16.3200	16.3200	1.2100e-003		16.3503
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0132	9.7200e-003	0.1037	2.4000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.4730	23.4730	8.9000e-004		23.4951
Total	**0.0202**	**0.2042**	**0.1535**	**6.5000e-004**	**0.0321**	**1.6600e-003**	**0.0338**	**8.6900e-003**	**1.5900e-003**	**0.0103**		**66.9660**	**66.9660**	**4.2500e-003**		**67.0722**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2812	12.7589	8.0700	0.0114		0.8591	0.8591		0.7904	0.7904	0.0000	1,165.9164	1,165.9164	0.3572		1,174.8473
Total	**1.2812**	**12.7589**	**8.0700**	**0.0114**		**0.8591**	**0.8591**		**0.7904**	**0.7904**	**0.0000**	**1,165.9164**	**1,165.9164**	**0.3572**		**1,174.8473**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9700e-003	0.0650	0.0128	1.5000e-004	3.3600e-003	3.5000e-004	3.7100e-003	9.2000e-004	3.4000e-004	1.2600e-003		16.3200	16.3200	1.2100e-003		16.3503
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0132	9.7200e-003	0.1037	2.4000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.4730	23.4730	8.9000e-004		23.4951
Total	**0.0202**	**0.2042**	**0.1535**	**6.5000e-004**	**0.0321**	**1.6600e-003**	**0.0338**	**8.6900e-003**	**1.5900e-003**	**0.0103**		**66.9660**	**66.9660**	**4.2500e-003**		**67.0722**

3.7 building paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636		1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0532**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**		**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

3.7 building paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1184	0.0875	0.9330	2.1200e-003	0.2012	1.6600e-003	0.2029	0.0534	1.5300e-003	0.0549		211.2566	211.2566	7.9900e-003		211.4563
Total	**0.1266**	**0.3579**	**0.9860**	**2.7500e-003**	**0.2152**	**3.1200e-003**	**0.2183**	**0.0572**	**2.9300e-003**	**0.0601**		**279.1477**	**279.1477**	**0.0130**		**279.4734**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636	0.0000	1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0532**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**	**0.0000**	**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

3.7 building paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1184	0.0875	0.9330	2.1200e-003	0.2012	1.6600e-003	0.2029	0.0534	1.5300e-003	0.0549		211.2566	211.2566	7.9900e-003		211.4563
Total	**0.1266**	**0.3579**	**0.9860**	**2.7500e-003**	**0.2152**	**3.1200e-003**	**0.2183**	**0.0572**	**2.9300e-003**	**0.0601**		**279.1477**	**279.1477**	**0.0130**		**279.4734**

3.8 baghouse pad paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0610	10.5057	7.6425	0.0111		0.6601	0.6601		0.6084	0.6084		1,117.4400	1,117.4400	0.3322		1,125.7437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0610**	**10.5057**	**7.6425**	**0.0111**		**0.6601**	**0.6601**		**0.6084**	**0.6084**		**1,117.4400**	**1,117.4400**	**0.3322**		**1,125.7437**

3.8 baghouse pad paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1316	0.0972	1.0367	2.3600e-003	0.2236	1.8400e-003	0.2254	0.0593	1.7000e-003	0.0610		234.7296	234.7296	8.8800e-003		234.9514
Total	**0.1398**	**0.3676**	**1.0897**	**2.9900e-003**	**0.2375**	**3.3000e-003**	**0.2408**	**0.0631**	**3.1000e-003**	**0.0662**		**302.6207**	**302.6207**	**0.0139**		**302.9686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0610	10.5057	7.6425	0.0111		0.6601	0.6601		0.6084	0.6084	0.0000	1,117.4400	1,117.4400	0.3322		1,125.7437
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0610**	**10.5057**	**7.6425**	**0.0111**		**0.6601**	**0.6601**		**0.6084**	**0.6084**	**0.0000**	**1,117.4400**	**1,117.4400**	**0.3322**		**1,125.7437**

3.8 baghouse pad paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1316	0.0972	1.0367	2.3600e-003	0.2236	1.8400e-003	0.2254	0.0593	1.7000e-003	0.0610		234.7296	234.7296	8.8800e-003		234.9514
Total	**0.1398**	**0.3676**	**1.0897**	**2.9900e-003**	**0.2375**	**3.3000e-003**	**0.2408**	**0.0631**	**3.1000e-003**	**0.0662**		**302.6207**	**302.6207**	**0.0139**		**302.9686**

3.9 baghouse installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9443	15.8945	9.7526	0.0164		0.9294	0.9294		0.8893	0.8893		1,576.7758	1,576.7758	0.3240		1,584.8756
Total	**1.9443**	**15.8945**	**9.7526**	**0.0164**		**0.9294**	**0.9294**		**0.8893**	**0.8893**		**1,576.7758**	**1,576.7758**	**0.3240**		**1,584.8756**

3.9 baghouse installation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0132	9.7200e-003	0.1037	2.4000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.4730	23.4730	8.9000e-004		23.4951
Total	**0.0264**	**0.4096**	**0.1938**	**1.1300e-003**	**0.0427**	**2.7700e-003**	**0.0455**	**0.0116**	**2.6500e-003**	**0.0143**		**118.5371**	**118.5371**	**8.0800e-003**		**118.7390**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9443	15.8945	9.7526	0.0164		0.9294	0.9294		0.8893	0.8893	0.0000	1,576.7758	1,576.7758	0.3240		1,584.8756
Total	**1.9443**	**15.8945**	**9.7526**	**0.0164**		**0.9294**	**0.9294**		**0.8893**	**0.8893**	**0.0000**	**1,576.7758**	**1,576.7758**	**0.3240**		**1,584.8756**

3.9 baghouse installation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.1900e-003	0.2704	0.0531	6.3000e-004	0.0140	1.4600e-003	0.0154	3.8300e-003	1.4000e-003	5.2300e-003		67.8911	67.8911	5.0400e-003		68.0171
Vendor	5.0400e-003	0.1295	0.0371	2.6000e-004	6.4000e-003	1.1300e-003	7.5300e-003	1.8400e-003	1.0800e-003	2.9300e-003		27.1731	27.1731	2.1500e-003		27.2268
Worker	0.0132	9.7200e-003	0.1037	2.4000e-004	0.0224	1.8000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.4730	23.4730	8.9000e-004		23.4951
Total	**0.0264**	**0.4096**	**0.1938**	**1.1300e-003**	**0.0427**	**2.7700e-003**	**0.0455**	**0.0116**	**2.6500e-003**	**0.0143**		**118.5371**	**118.5371**	**8.0800e-003**		**118.7390**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0280	0.1467	0.4006	1.1400e-003	0.0879	1.5700e-003	0.0895	0.0235	1.4800e-003	0.0250		115.2127	115.2127	6.7700e-003		115.3820
Unmitigated	0.0280	0.1467	0.4006	1.1400e-003	0.0879	1.5700e-003	0.0895	0.0235	1.4800e-003	0.0250		115.2127	115.2127	6.7700e-003		115.3820

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	9.64	9.64	9.64	41,328	41,328
Total	9.64	9.64	9.64	41,328	41,328

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
NaturalGas Unmitigated	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	13.6721	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Total		**1.5000e-004**	**1.3400e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6085**	**1.6085**	**3.0000e-005**	**3.0000e-005**	**1.6180**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.0136721	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6085	1.6085	3.0000e-005	3.0000e-005	1.6180
Total		**1.5000e-004**	**1.3400e-003**	**1.1300e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6085**	**1.6085**	**3.0000e-005**	**3.0000e-005**	**1.6180**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Unmitigated	0.1282	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Total	**0.1282**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2600e-003**	**1.2600e-003**	**0.0000**		**1.3400e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1136					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.2600e-003	1.2600e-003	0.0000		1.3400e-003
Total	**0.1282**	**1.0000e-005**	**6.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.2600e-003**	**1.2600e-003**	**0.0000**		**1.3400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 1 - New Building Construction (Annual)

R1430_Press Forge_20161220

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	5.74	1000sqft	0.13	5,736.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 5736 sq ft

Construction Phase - assumptions: 5 days grading (including soil and demolition material hauling), 52 days of building construction, 10 day for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Off-road Equipment - default equipment, hp, LF. assume two equipment for each for paving. Each operate 4 hrs

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - default

Off-road Equipment - defalut

Off-road Equipment - assumption

Off-road Equipment - assumption

Off-road Equipment - assumptions based on the equipment data (unit amount and hr/day) used in previous EA for R1155, use default hp and LF, assume 8 hr operation time

Trips and VMT - assumptions

Demolition - assume 5000 sq ft of building demo, 4000 sq ft for 4 baghouses and 4000 sq ft for 4 baghouse foundation

Grading - assume 600 cu yard soil import and export

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	52.00
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	MaterialExported	0.00	600.00
tblGrading	MaterialImported	0.00	600.00
tblLandUse	BuildingSpaceSquareFeet	5,740.00	5,736.00
tblLandUse	LandUseSquareFeet	5,740.00	5,736.00
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets

tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	18.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	10.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0154	0.1305	0.0957	1.6000e-004	6.3500e-003	8.9600e-003	0.0153	1.1400e-003	8.5500e-003	9.6900e-003	0.0000	14.3674	14.3674	2.5100e-003	0.0000	14.4303
2017	0.0616	0.5944	0.3881	6.5000e-004	8.3200e-003	0.0368	0.0451	2.5700e-003	0.0342	0.0368	0.0000	60.1070	60.1070	0.0141	0.0000	60.4605
Maximum	**0.0616**	**0.5944**	**0.3881**	**6.5000e-004**	**8.3200e-003**	**0.0368**	**0.0451**	**2.5700e-003**	**0.0342**	**0.0368**	**0.0000**	**60.1070**	**60.1070**	**0.0141**	**0.0000**	**60.4605**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0154	0.1305	0.0957	1.6000e-004	6.3500e-003	8.9600e-003	0.0153	1.1400e-003	8.5500e-003	9.6900e-003	0.0000	14.3674	14.3674	2.5100e-003	0.0000	14.4303
2017	0.0616	0.5944	0.3881	6.5000e-004	8.3200e-003	0.0368	0.0451	2.5700e-003	0.0342	0.0368	0.0000	60.1069	60.1069	0.0141	0.0000	60.4605
Maximum	**0.0616**	**0.5944**	**0.3881**	**6.5000e-004**	**8.3200e-003**	**0.0368**	**0.0451**	**2.5700e-003**	**0.0342**	**0.0368**	**0.0000**	**60.1069**	**60.1069**	**0.0141**	**0.0000**	**60.4605**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	12-1-2016	2-28-2017	0.3324	0.3324
2	3-1-2017	5-31-2017	0.2469	0.2469
		Highest	0.3324	0.3324

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0234	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	7.5402	7.5402	3.1000e-004	7.0000e-005	7.5678
Mobile	4.9900e-003	0.0272	0.0742	2.1000e-004	0.0157	2.8000e-004	0.0160	4.2100e-003	2.7000e-004	4.4800e-003	0.0000	19.2889	19.2889	1.1200e-003	0.0000	19.3168
Waste						0.0000	0.0000		0.0000	0.0000	1.0962	0.0000	1.0962	0.0648	0.0000	2.7157
Water						0.0000	0.0000		0.0000	0.0000	0.4211	5.5070	5.9281	0.0435	1.0700e-003	7.3335
Total	**0.0284**	**0.0274**	**0.0745**	**2.1000e-004**	**0.0157**	**3.0000e-004**	**0.0160**	**4.2100e-003**	**2.9000e-004**	**4.5000e-003**	**1.5173**	**32.3362**	**33.8535**	**0.1097**	**1.1400e-003**	**36.9339**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0234	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	7.5402	7.5402	3.1000e-004	7.0000e-005	7.5678
Mobile	4.9900e-003	0.0272	0.0742	2.1000e-004	0.0157	2.8000e-004	0.0160	4.2100e-003	2.7000e-004	4.4800e-003	0.0000	19.2889	19.2889	1.1200e-003	0.0000	19.3168
Waste						0.0000	0.0000		0.0000	0.0000	1.0962	0.0000	1.0962	0.0648	0.0000	2.7157
Water						0.0000	0.0000		0.0000	0.0000	0.4211	5.5070	5.9281	0.0435	1.0700e-003	7.3335
Total	**0.0284**	**0.0274**	**0.0745**	**2.1000e-004**	**0.0157**	**3.0000e-004**	**0.0160**	**4.2100e-003**	**2.9000e-004**	**4.5000e-003**	**1.5173**	**32.3362**	**33.8535**	**0.1097**	**1.1400e-003**	**36.9339**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2016	12/14/2016	5	10	
2	old baghouse demo	Demolition	12/15/2016	12/28/2016	5	10	
3	old baghouse foundation demo	Demolition	12/29/2016	1/11/2017	5	10	
4	Grading	Grading	1/12/2017	1/18/2017	5	5	
5	Building Construction	Building Construction	1/19/2017	3/31/2017	5	52	
6	building paving	Paving	4/1/2017	4/7/2017	5	5	
7	baghouse pad paving	Paving	4/8/2017	4/21/2017	5	10	
8	baghouse installation	Building Construction	4/22/2017	5/5/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
building paving	Cement and Mortar Mixers	4	6.00	9	0.56
building paving	Pavers	1	7.00	130	0.42
building paving	Rollers	1	7.00	80	0.38
building paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73

old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
baghouse pad paving	Cement and Mortar Mixers	2	4.00	9	0.56
baghouse pad paving	Pavers	2	4.00	130	0.42
baghouse pad paving	Rollers	2	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	2	4.00	97	0.37
baghouse installation	Cranes	2	4.00	231	0.29
baghouse installation	Forklifts	2	4.00	89	0.20
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Generator Sets	2	4.00	84	0.74
baghouse installation	Welders	2	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
building paving	7	18.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	23.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	150.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	8	20.00	0.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	8	2.00	1.00	8.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4600e-003	0.0000	2.4600e-003	3.7000e-004	0.0000	3.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5900e-003	0.0562	0.0399	6.0000e-005		4.0500e-003	4.0500e-003		3.8600e-003	3.8600e-003	0.0000	5.3939	5.3939	1.0800e-003	0.0000	5.4208
Total	**6.5900e-003**	**0.0562**	**0.0399**	**6.0000e-005**	**2.4600e-003**	**4.0500e-003**	**6.5100e-003**	**3.7000e-004**	**3.8600e-003**	**4.2300e-003**	**0.0000**	**5.3939**	**5.3939**	**1.0800e-003**	**0.0000**	**5.4208**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4000e-004	4.3500e-003	8.2000e-004	1.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.9018	0.9018	7.0000e-005	0.0000	0.9035
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	3.0300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5558	0.5558	2.0000e-005	0.0000	0.5563
Total	**4.8000e-004**	**4.6400e-003**	**3.8500e-003**	**2.0000e-005**	**7.5000e-004**	**3.0000e-005**	**7.8000e-004**	**2.0000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**1.4576**	**1.4576**	**9.0000e-005**	**0.0000**	**1.4598**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4600e-003	0.0000	2.4600e-003	3.7000e-004	0.0000	3.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5900e-003	0.0562	0.0399	6.0000e-005		4.0500e-003	4.0500e-003		3.8600e-003	3.8600e-003	0.0000	5.3939	5.3939	1.0800e-003	0.0000	5.4208
Total	**6.5900e-003**	**0.0562**	**0.0399**	**6.0000e-005**	**2.4600e-003**	**4.0500e-003**	**6.5100e-003**	**3.7000e-004**	**3.8600e-003**	**4.2300e-003**	**0.0000**	**5.3939**	**5.3939**	**1.0800e-003**	**0.0000**	**5.4208**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4000e-004	4.3500e-003	8.2000e-004	1.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.9018	0.9018	7.0000e-005	0.0000	0.9035
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	3.0300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5558	0.5558	2.0000e-005	0.0000	0.5563
Total	**4.8000e-004**	**4.6400e-003**	**3.8500e-003**	**2.0000e-005**	**7.5000e-004**	**3.0000e-005**	**7.8000e-004**	**2.0000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**1.4576**	**1.4576**	**9.0000e-005**	**0.0000**	**1.4598**

3.3 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9700e-003	0.0000	1.9700e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5900e-003	0.0562	0.0399	6.0000e-005		4.0500e-003	4.0500e-003		3.8600e-003	3.8600e-003	0.0000	5.3939	5.3939	1.0800e-003	0.0000	5.4208
Total	**6.5900e-003**	**0.0562**	**0.0399**	**6.0000e-005**	**1.9700e-003**	**4.0500e-003**	**6.0200e-003**	**3.0000e-004**	**3.8600e-003**	**4.1600e-003**	**0.0000**	**5.3939**	**5.3939**	**1.0800e-003**	**0.0000**	**5.4208**

3.3 old baghouse demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.5100e-003	2.8000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3137	0.3137	2.0000e-005	0.0000	0.3143
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	3.0300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5558	0.5558	2.0000e-005	0.0000	0.5563
Total	**3.9000e-004**	**1.8000e-003**	**3.3100e-003**	**1.0000e-005**	**6.2000e-004**	**1.0000e-005**	**6.3000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.8694**	**0.8694**	**4.0000e-005**	**0.0000**	**0.8706**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9700e-003	0.0000	1.9700e-003	3.0000e-004	0.0000	3.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5900e-003	0.0562	0.0399	6.0000e-005		4.0500e-003	4.0500e-003		3.8600e-003	3.8600e-003	0.0000	5.3939	5.3939	1.0800e-003	0.0000	5.4208
Total	**6.5900e-003**	**0.0562**	**0.0399**	**6.0000e-005**	**1.9700e-003**	**4.0500e-003**	**6.0200e-003**	**3.0000e-004**	**3.8600e-003**	**4.1600e-003**	**0.0000**	**5.3939**	**5.3939**	**1.0800e-003**	**0.0000**	**5.4208**

3.3 old baghouse demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.5100e-003	2.8000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3137	0.3137	2.0000e-005	0.0000	0.3143
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.9000e-004	3.0300e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5558	0.5558	2.0000e-005	0.0000	0.5563
Total	**3.9000e-004**	**1.8000e-003**	**3.3100e-003**	**1.0000e-005**	**6.2000e-004**	**1.0000e-005**	**6.3000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.8694**	**0.8694**	**4.0000e-005**	**0.0000**	**0.8706**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9000e-004	0.0000	3.9000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	0.0113	7.9900e-003	1.0000e-005		8.1000e-004	8.1000e-004		7.7000e-004	7.7000e-004	0.0000	1.0788	1.0788	2.2000e-004	0.0000	1.0842
Total	**1.3200e-003**	**0.0113**	**7.9900e-003**	**1.0000e-005**	**3.9000e-004**	**8.1000e-004**	**1.2000e-003**	**6.0000e-005**	**7.7000e-004**	**8.3000e-004**	**0.0000**	**1.0788**	**1.0788**	**2.2000e-004**	**0.0000**	**1.0842**

3.4 old baghouse foundation demo - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0627	0.0627	0.0000	0.0000	0.0629
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	6.0000e-005	6.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1112	0.1112	0.0000	0.0000	0.1113
Total	**8.0000e-005**	**3.6000e-004**	**6.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1739**	**0.1739**	**0.0000**	**0.0000**	**0.1741**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9000e-004	0.0000	3.9000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3200e-003	0.0113	7.9900e-003	1.0000e-005		8.1000e-004	8.1000e-004		7.7000e-004	7.7000e-004	0.0000	1.0788	1.0788	2.2000e-004	0.0000	1.0842
Total	**1.3200e-003**	**0.0113**	**7.9900e-003**	**1.0000e-005**	**3.9000e-004**	**8.1000e-004**	**1.2000e-003**	**6.0000e-005**	**7.7000e-004**	**8.3000e-004**	**0.0000**	**1.0788**	**1.0788**	**2.2000e-004**	**0.0000**	**1.0842**

3.4 old baghouse foundation demo - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.0000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0627	0.0627	0.0000	0.0000	0.0629
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	6.0000e-005	6.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1112	0.1112	0.0000	0.0000	0.1113
Total	**8.0000e-005**	**3.6000e-004**	**6.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1739**	**0.1739**	**0.0000**	**0.0000**	**0.1741**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5700e-003	0.0000	1.5700e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8400e-003	0.0420	0.0317	5.0000e-005		2.9300e-003	2.9300e-003		2.7900e-003	2.7900e-003	0.0000	4.2794	4.2794	8.4000e-004	0.0000	4.3004
Total	**4.8400e-003**	**0.0420**	**0.0317**	**5.0000e-005**	**1.5700e-003**	**2.9300e-003**	**4.5000e-003**	**2.4000e-004**	**2.7900e-003**	**3.0300e-003**	**0.0000**	**4.2794**	**4.2794**	**8.4000e-004**	**0.0000**	**4.3004**

3.4 old baghouse foundation demo - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.1000e-003	2.0000e-004	0.0000	7.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2489	0.2489	2.0000e-005	0.0000	0.2493
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	2.0000e-004	2.1300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4332	0.4332	2.0000e-005	0.0000	0.4336
Total	**2.7000e-004**	**1.3000e-003**	**2.3300e-003**	**0.0000**	**5.1000e-004**	**1.0000e-005**	**5.1000e-004**	**1.4000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**0.6820**	**0.6820**	**4.0000e-005**	**0.0000**	**0.6829**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5700e-003	0.0000	1.5700e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8400e-003	0.0420	0.0317	5.0000e-005		2.9300e-003	2.9300e-003		2.7900e-003	2.7900e-003	0.0000	4.2794	4.2794	8.4000e-004	0.0000	4.3004
Total	**4.8400e-003**	**0.0420**	**0.0317**	**5.0000e-005**	**1.5700e-003**	**2.9300e-003**	**4.5000e-003**	**2.4000e-004**	**2.7900e-003**	**3.0300e-003**	**0.0000**	**4.2794**	**4.2794**	**8.4000e-004**	**0.0000**	**4.3004**

3.4 old baghouse foundation demo - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.1000e-003	2.0000e-004	0.0000	7.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2489	0.2489	2.0000e-005	0.0000	0.2493
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	2.0000e-004	2.1300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4332	0.4332	2.0000e-005	0.0000	0.4336
Total	**2.7000e-004**	**1.3000e-003**	**2.3300e-003**	**0.0000**	**5.1000e-004**	**1.0000e-005**	**5.1000e-004**	**1.4000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**0.6820**	**0.6820**	**4.0000e-005**	**0.0000**	**0.6829**

3.5 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9500e-003	0.0000	1.9500e-003	1.0400e-003	0.0000	1.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0200e-003	0.0262	0.0198	3.0000e-005		1.8300e-003	1.8300e-003		1.7400e-003	1.7400e-003	0.0000	2.6746	2.6746	5.3000e-004	0.0000	2.6878
Total	**3.0200e-003**	**0.0262**	**0.0198**	**3.0000e-005**	**1.9500e-003**	**1.8300e-003**	**3.7800e-003**	**1.0400e-003**	**1.7400e-003**	**2.7800e-003**	**0.0000**	**2.6746**	**2.6746**	**5.3000e-004**	**0.0000**	**2.6878**

3.5 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6000e-004	0.0258	4.7600e-003	6.0000e-005	1.2900e-003	1.4000e-004	1.4300e-003	3.5000e-004	1.3000e-004	4.8000e-004	0.0000	5.8332	5.8332	4.2000e-004	0.0000	5.8437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.2000e-004	1.3300e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2707	0.2707	1.0000e-005	0.0000	0.2710
Total	**9.1000e-004**	**0.0259**	**6.0900e-003**	**6.0000e-005**	**1.5600e-003**	**1.4000e-004**	**1.7100e-003**	**4.2000e-004**	**1.3000e-004**	**5.5000e-004**	**0.0000**	**6.1040**	**6.1040**	**4.3000e-004**	**0.0000**	**6.1147**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.9500e-003	0.0000	1.9500e-003	1.0400e-003	0.0000	1.0400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0200e-003	0.0262	0.0198	3.0000e-005		1.8300e-003	1.8300e-003		1.7400e-003	1.7400e-003	0.0000	2.6746	2.6746	5.3000e-004	0.0000	2.6878
Total	**3.0200e-003**	**0.0262**	**0.0198**	**3.0000e-005**	**1.9500e-003**	**1.8300e-003**	**3.7800e-003**	**1.0400e-003**	**1.7400e-003**	**2.7800e-003**	**0.0000**	**2.6746**	**2.6746**	**5.3000e-004**	**0.0000**	**2.6878**

3.5 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6000e-004	0.0258	4.7600e-003	6.0000e-005	1.2900e-003	1.4000e-004	1.4300e-003	3.5000e-004	1.3000e-004	4.8000e-004	0.0000	5.8332	5.8332	4.2000e-004	0.0000	5.8437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.2000e-004	1.3300e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2707	0.2707	1.0000e-005	0.0000	0.2710
Total	**9.1000e-004**	**0.0259**	**6.0900e-003**	**6.0000e-005**	**1.5600e-003**	**1.4000e-004**	**1.7100e-003**	**4.2000e-004**	**1.3000e-004**	**5.5000e-004**	**0.0000**	**6.1040**	**6.1040**	**4.3000e-004**	**0.0000**	**6.1147**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0333	0.3317	0.2098	3.0000e-004		0.0223	0.0223		0.0206	0.0206	0.0000	27.5002	27.5002	8.4300e-003	0.0000	27.7109
Total	**0.0333**	**0.3317**	**0.2098**	**3.0000e-004**		**0.0223**	**0.0223**		**0.0206**	**0.0206**	**0.0000**	**27.5002**	**27.5002**	**8.4300e-003**	**0.0000**	**27.7109**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.7200e-003	3.2000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3889	0.3889	3.0000e-005	0.0000	0.3896
Vendor	1.3000e-004	3.4300e-003	9.2000e-004	1.0000e-005	1.6000e-004	3.0000e-005	1.9000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.6515	0.6515	5.0000e-005	0.0000	0.6527
Worker	3.1000e-004	2.6000e-004	2.7700e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5631	0.5631	2.0000e-005	0.0000	0.5636
Total	**4.9000e-004**	**5.4100e-003**	**4.0100e-003**	**2.0000e-005**	**8.2000e-004**	**4.0000e-005**	**8.7000e-004**	**2.2000e-004**	**4.0000e-005**	**2.7000e-004**	**0.0000**	**1.6035**	**1.6035**	**1.0000e-004**	**0.0000**	**1.6059**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0333	0.3317	0.2098	3.0000e-004		0.0223	0.0223		0.0206	0.0206	0.0000	27.5002	27.5002	8.4300e-003	0.0000	27.7109
Total	**0.0333**	**0.3317**	**0.2098**	**3.0000e-004**		**0.0223**	**0.0223**		**0.0206**	**0.0206**	**0.0000**	**27.5002**	**27.5002**	**8.4300e-003**	**0.0000**	**27.7109**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	1.7200e-003	3.2000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3889	0.3889	3.0000e-005	0.0000	0.3896
Vendor	1.3000e-004	3.4300e-003	9.2000e-004	1.0000e-005	1.6000e-004	3.0000e-005	1.9000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.6515	0.6515	5.0000e-005	0.0000	0.6527
Worker	3.1000e-004	2.6000e-004	2.7700e-003	1.0000e-005	5.7000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.5631	0.5631	2.0000e-005	0.0000	0.5636
Total	**4.9000e-004**	**5.4100e-003**	**4.0100e-003**	**2.0000e-005**	**8.2000e-004**	**4.0000e-005**	**8.7000e-004**	**2.2000e-004**	**4.0000e-005**	**2.7000e-004**	**0.0000**	**1.6035**	**1.6035**	**1.0000e-004**	**0.0000**	**1.6059**

3.7 building paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6300e-003**	**0.0249**	**0.0184**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**2.4610**	**2.4610**	**6.8000e-004**	**0.0000**	**2.4781**

3.7 building paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	6.9000e-004	1.3000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1556	0.1556	1.0000e-005	0.0000	0.1558
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.3900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4873	0.4873	2.0000e-005	0.0000	0.4878
Total	**2.9000e-004**	**9.1000e-004**	**2.5200e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.4000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.6428**	**0.6428**	**3.0000e-005**	**0.0000**	**0.6436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6300e-003**	**0.0249**	**0.0184**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**2.4610**	**2.4610**	**6.8000e-004**	**0.0000**	**2.4781**

3.7 building paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	6.9000e-004	1.3000e-004	0.0000	3.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1556	0.1556	1.0000e-005	0.0000	0.1558
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	2.2000e-004	2.3900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4873	0.4873	2.0000e-005	0.0000	0.4878
Total	**2.9000e-004**	**9.1000e-004**	**2.5200e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.4000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.6428**	**0.6428**	**3.0000e-005**	**0.0000**	**0.6436**

3.8 baghouse pad paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3000e-003	0.0525	0.0382	6.0000e-005		3.3000e-003	3.3000e-003		3.0400e-003	3.0400e-003	0.0000	5.0686	5.0686	1.5100e-003	0.0000	5.1063
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3000e-003**	**0.0525**	**0.0382**	**6.0000e-005**		**3.3000e-003**	**3.3000e-003**		**3.0400e-003**	**3.0400e-003**	**0.0000**	**5.0686**	**5.0686**	**1.5100e-003**	**0.0000**	**5.1063**

3.8 baghouse pad paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3800e-003	2.5000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3111	0.3111	2.0000e-005	0.0000	0.3117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	5.0000e-004	5.3200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0829	1.0829	4.0000e-005	0.0000	1.0839
Total	**6.4000e-004**	**1.8800e-003**	**5.5700e-003**	**1.0000e-005**	**1.1700e-003**	**2.0000e-005**	**1.1900e-003**	**3.1000e-004**	**2.0000e-005**	**3.3000e-004**	**0.0000**	**1.3940**	**1.3940**	**6.0000e-005**	**0.0000**	**1.3956**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.3000e-003	0.0525	0.0382	6.0000e-005		3.3000e-003	3.3000e-003		3.0400e-003	3.0400e-003	0.0000	5.0686	5.0686	1.5100e-003	0.0000	5.1063
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3000e-003**	**0.0525**	**0.0382**	**6.0000e-005**		**3.3000e-003**	**3.3000e-003**		**3.0400e-003**	**3.0400e-003**	**0.0000**	**5.0686**	**5.0686**	**1.5100e-003**	**0.0000**	**5.1063**

3.8 baghouse pad paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3800e-003	2.5000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3111	0.3111	2.0000e-005	0.0000	0.3117
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-004	5.0000e-004	5.3200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0829	1.0829	4.0000e-005	0.0000	1.0839
Total	**6.4000e-004**	**1.8800e-003**	**5.5700e-003**	**1.0000e-005**	**1.1700e-003**	**2.0000e-005**	**1.1900e-003**	**3.1000e-004**	**2.0000e-005**	**3.3000e-004**	**0.0000**	**1.3940**	**1.3940**	**6.0000e-005**	**0.0000**	**1.3956**

3.9 baghouse installation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7200e-003	0.0795	0.0488	8.0000e-005		4.6500e-003	4.6500e-003		4.4500e-003	4.4500e-003	0.0000	7.1521	7.1521	1.4700e-003	0.0000	7.1889
Total	**9.7200e-003**	**0.0795**	**0.0488**	**8.0000e-005**		**4.6500e-003**	**4.6500e-003**		**4.4500e-003**	**4.4500e-003**	**0.0000**	**7.1521**	**7.1521**	**1.4700e-003**	**0.0000**	**7.1889**

3.9 baghouse installation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3800e-003	2.5000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3111	0.3111	2.0000e-005	0.0000	0.3117
Vendor	2.0000e-005	6.6000e-004	1.8000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1255
Worker	6.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1083	0.1083	0.0000	0.0000	0.1084
Total	**1.2000e-004**	**2.0900e-003**	**9.6000e-004**	**0.0000**	**2.1000e-004**	**2.0000e-005**	**2.3000e-004**	**6.0000e-005**	**2.0000e-005**	**7.0000e-005**	**0.0000**	**0.5447**	**0.5447**	**3.0000e-005**	**0.0000**	**0.5456**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7200e-003	0.0795	0.0488	8.0000e-005		4.6500e-003	4.6500e-003		4.4500e-003	4.4500e-003	0.0000	7.1521	7.1521	1.4700e-003	0.0000	7.1889
Total	**9.7200e-003**	**0.0795**	**0.0488**	**8.0000e-005**		**4.6500e-003**	**4.6500e-003**		**4.4500e-003**	**4.4500e-003**	**0.0000**	**7.1521**	**7.1521**	**1.4700e-003**	**0.0000**	**7.1889**

3.9 baghouse installation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3800e-003	2.5000e-004	0.0000	7.0000e-005	1.0000e-005	8.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3111	0.3111	2.0000e-005	0.0000	0.3117
Vendor	2.0000e-005	6.6000e-004	1.8000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.1253	0.1253	1.0000e-005	0.0000	0.1255
Worker	6.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1083	0.1083	0.0000	0.0000	0.1084
Total	**1.2000e-004**	**2.0900e-003**	**9.6000e-004**	**0.0000**	**2.1000e-004**	**2.0000e-005**	**2.3000e-004**	**6.0000e-005**	**2.0000e-005**	**7.0000e-005**	**0.0000**	**0.5447**	**0.5447**	**3.0000e-005**	**0.0000**	**0.5456**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.9900e-003	0.0272	0.0742	2.1000e-004	0.0157	2.8000e-004	0.0160	4.2100e-003	2.7000e-004	4.4800e-003	0.0000	19.2889	19.2889	1.1200e-003	0.0000	19.3168
Unmitigated	4.9900e-003	0.0272	0.0742	2.1000e-004	0.0157	2.8000e-004	0.0160	4.2100e-003	2.7000e-004	4.4800e-003	0.0000	19.2889	19.2889	1.1200e-003	0.0000	19.3168

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	9.64	9.64	9.64	41,328	41,328
Total	9.64	9.64	9.64	41,328	41,328

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.2739	7.2739	3.0000e-004	6.0000e-005	7.2999
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.2739	7.2739	3.0000e-004	6.0000e-005	7.2999
NaturalGas Mitigated	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2663	0.2663	1.0000e-005	0.0000	0.2679
NaturalGas Unmitigated	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2663	0.2663	1.0000e-005	0.0000	0.2679

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	4990.32	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2663	0.2663	1.0000e-005	0.0000	0.2679
Total		**3.0000e-005**	**2.4000e-004**	**2.1000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2663**	**0.2663**	**1.0000e-005**	**0.0000**	**0.2679**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	4990.32	3.0000e-005	2.4000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2663	0.2663	1.0000e-005	0.0000	0.2679
Total		**3.0000e-005**	**2.4000e-004**	**2.1000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2663**	**0.2663**	**1.0000e-005**	**0.0000**	**0.2679**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	22829.3	7.2739	3.0000e-004	6.0000e-005	7.2999
Total		**7.2739**	**3.0000e-004**	**6.0000e-005**	**7.2999**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	22829.3	7.2739	3.0000e-004	6.0000e-005	7.2999
Total		**7.2739**	**3.0000e-004**	**6.0000e-005**	**7.2999**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0234	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Unmitigated	0.0234	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.6600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**0.0234**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.6600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**0.0234**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.9281	0.0435	1.0700e-003	7.3335
Unmitigated	5.9281	0.0435	1.0700e-003	7.3335

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	1.32738 / 0	5.9281	0.0435	1.0700e-003	7.3335
Total		**5.9281**	**0.0435**	**1.0700e-003**	**7.3335**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	1.32738 / 0	5.9281	0.0435	1.0700e-003	7.3335
Total		**5.9281**	**0.0435**	**1.0700e-003**	**7.3335**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.0962	0.0648	0.0000	2.7157
Unmitigated	1.0962	0.0648	0.0000	2.7157

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	5.4	1.0962	0.0648	0.0000	2.7157
Total		**1.0962**	**0.0648**	**0.0000**	**2.7157**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	5.4	1.0962	0.0648	0.0000	2.7157
Total		**1.0962**	**0.0648**	**0.0000**	**2.7157**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 2 - New Baghouse/HEPA Installation (Summer)

R1430_one baghouse_20161220

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 2000 sq ft

Construction Phase - assumptions: 5 days for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. one baghouse installation

Off-road Equipment - assumptions: default paving equipment, hp, and LF. Hr/d is from the R1155 EA. one baghouse installation

Off-road Equipment - default

Off-road Equipment - assumption

Off-road Equipment - assumption

Trips and VMT - assumptions

Demolition - assume 1000 sq ft for one baghouse and 1000 sq ft for one baghouse foundation

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.3908	11.4430	8.6634	0.0136	0.3156	0.8114	1.1271	0.0614	0.7743	0.8357	0.0000	1,352.6954	1,352.6954	0.2452	0.0000	1,358.8241
Maximum	**1.3908**	**11.4430**	**8.6634**	**0.0136**	**0.3156**	**0.8114**	**1.1271**	**0.0614**	**0.7743**	**0.8357**	**0.0000**	**1,352.6954**	**1,352.6954**	**0.2452**	**0.0000**	**1,358.8241**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.3908	11.4430	8.6634	0.0136	0.3156	0.8114	1.1271	0.0614	0.7743	0.8357	0.0000	1,352.6954	1,352.6954	0.2452	0.0000	1,358.8241
Maximum	**1.3908**	**11.4430**	**8.6634**	**0.0136**	**0.3156**	**0.8114**	**1.1271**	**0.0614**	**0.7743**	**0.8357**	**0.0000**	**1,352.6954**	**1,352.6954**	**0.2452**	**0.0000**	**1,358.8241**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Mobile	0.0101	0.0495	0.1498	4.2000e-004	0.0306	5.4000e-004	0.0312	8.2000e-003	5.1000e-004	8.7100e-003		42.4043	42.4043	2.3900e-003		42.4641
Total	**0.0549**	**0.0499**	**0.1504**	**4.2000e-004**	**0.0306**	**5.8000e-004**	**0.0312**	**8.2000e-003**	**5.5000e-004**	**8.7500e-003**		**42.9656**	**42.9656**	**2.4000e-003**	**1.0000e-005**	**43.0287**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Mobile	0.0101	0.0495	0.1498	4.2000e-004	0.0306	5.4000e-004	0.0312	8.2000e-003	5.1000e-004	8.7100e-003		42.4043	42.4043	2.3900e-003		42.4641
Total	**0.0549**	**0.0499**	**0.1504**	**4.2000e-004**	**0.0306**	**5.8000e-004**	**0.0312**	**8.2000e-003**	**5.5000e-004**	**8.7500e-003**		**42.9656**	**42.9656**	**2.4000e-003**	**1.0000e-005**	**43.0287**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	old baghouse demo	Demolition	12/1/2016	12/7/2016	5	5	
2	old baghouse foundation demo	Demolition	12/8/2016	12/14/2016	5	5	
3	baghouse pad paving	Paving	12/15/2016	12/21/2016	5	5	
4	baghouse installation	Building Construction	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
baghouse installation	Cranes	1	4.00	231	0.29
baghouse installation	Forklifts	1	4.00	89	0.20
baghouse installation	Generator Sets	1	4.00	84	0.74
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Welders	1	4.00	46	0.45
baghouse pad paving	Cement and Mortar Mixers	1	4.00	9	0.56
baghouse pad paving	Pavers	1	4.00	130	0.42
baghouse pad paving	Rollers	1	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
old baghouse demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	4	1.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.2 old baghouse demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.3 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.3 old baghouse foundation demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.4 baghouse pad paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5767	5.7153	3.8503	5.5700e-003		0.3640	0.3640		0.3354	0.3354		567.2296	567.2296	0.1661		571.3821
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5767**	**5.7153**	**3.8503**	**5.5700e-003**		**0.3640**	**0.3640**		**0.3354**	**0.3354**		**567.2296**	**567.2296**	**0.1661**		**571.3821**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.4 baghouse pad paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5767	5.7153	3.8503	5.5700e-003		0.3640	0.3640		0.3354	0.3354	0.0000	567.2296	567.2296	0.1661		571.3821
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5767**	**5.7153**	**3.8503**	**5.5700e-003**		**0.3640**	**0.3640**		**0.3354**	**0.3354**	**0.0000**	**567.2296**	**567.2296**	**0.1661**		**571.3821**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0683	0.0508	0.6472	1.3000e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		128.7280	128.7280	5.3700e-003		128.8623
Total	**0.0731**	**0.1969**	**0.6747**	**1.6200e-003**	**0.1188**	**2.1200e-003**	**0.1209**	**0.0316**	**2.0000e-003**	**0.0336**		**163.5446**	**163.5446**	**7.8700e-003**		**163.7413**

3.5 baghouse installation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0821	8.6552	5.0433	8.2100e-003		0.5199	0.5199		0.4975	0.4975		794.2194	794.2194	0.1680		798.4195
Total	**1.0821**	**8.6552**	**5.0433**	**8.2100e-003**		**0.5199**	**0.5199**		**0.4975**	**0.4975**		**794.2194**	**794.2194**	**0.1680**		**798.4195**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	6.8300e-003	5.0800e-003	0.0647	1.3000e-004	0.0112	1.0000e-004	0.0113	2.9600e-003	9.0000e-005	3.0500e-003		12.8728	12.8728	5.4000e-004		12.8862
Total	**0.0117**	**0.1512**	**0.0922**	**4.5000e-004**	**0.0182**	**1.2600e-003**	**0.0194**	**4.8800e-003**	**1.2000e-003**	**6.0800e-003**		**47.6894**	**47.6894**	**3.0400e-003**		**47.7653**

3.5 baghouse installation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0821	8.6552	5.0433	8.2100e-003		0.5199	0.5199		0.4975	0.4975	0.0000	794.2194	794.2194	0.1680		798.4195
Total	**1.0821**	**8.6552**	**5.0433**	**8.2100e-003**		**0.5199**	**0.5199**		**0.4975**	**0.4975**	**0.0000**	**794.2194**	**794.2194**	**0.1680**		**798.4195**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.8600e-003	0.1461	0.0275	3.2000e-004	6.9900e-003	1.1600e-003	8.1500e-003	1.9200e-003	1.1100e-003	3.0300e-003		34.8166	34.8166	2.5000e-003		34.8790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	6.8300e-003	5.0800e-003	0.0647	1.3000e-004	0.0112	1.0000e-004	0.0113	2.9600e-003	9.0000e-005	3.0500e-003		12.8728	12.8728	5.4000e-004		12.8862
Total	**0.0117**	**0.1512**	**0.0922**	**4.5000e-004**	**0.0182**	**1.2600e-003**	**0.0194**	**4.8800e-003**	**1.2000e-003**	**6.0800e-003**		**47.6894**	**47.6894**	**3.0400e-003**		**47.7653**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0101	0.0495	0.1498	4.2000e-004	0.0306	5.4000e-004	0.0312	8.2000e-003	5.1000e-004	8.7100e-003		42.4043	42.4043	2.3900e-003		42.4641
Unmitigated	0.0101	0.0495	0.1498	4.2000e-004	0.0306	5.4000e-004	0.0312	8.2000e-003	5.1000e-004	8.7100e-003		42.4043	42.4043	2.3900e-003		42.4641

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	3.36	3.36	3.36	14,400	14,400
Total	3.36	3.36	3.36	14,400	14,400

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
NaturalGas Unmitigated	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	4.76712	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Total		**5.0000e-005**	**4.7000e-004**	**3.9000e-004**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.5608**	**0.5608**	**1.0000e-005**	**1.0000e-005**	**0.5642**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.00476712	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Total		**5.0000e-005**	**4.7000e-004**	**3.9000e-004**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.5608**	**0.5608**	**1.0000e-005**	**1.0000e-005**	**0.5642**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Unmitigated	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 2 - New Baghouse/HEPA Installation (Winter)

R1430_one baghouse_20161220

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 2000 sq ft

Construction Phase - assumptions: 5 days for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. one baghouse installation

Off-road Equipment - assumptions: default paving equipment, hp, and LF. Hr/d is from the R1155 EA. one baghouse installation

Off-road Equipment - default

Off-road Equipment - assumption

Off-road Equipment - assumption

Trips and VMT - assumptions

Demolition - assume 1000 sq ft for one baghouse and 1000 sq ft for one baghouse foundation

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.3969	11.4504	8.6094	0.0135	0.3156	0.8114	1.1271	0.0614	0.7744	0.8357	0.0000	1,343.8696	1,343.8696	0.2450	0.0000	1,349.9934
Maximum	**1.3969**	**11.4504**	**8.6094**	**0.0135**	**0.3156**	**0.8114**	**1.1271**	**0.0614**	**0.7744**	**0.8357**	**0.0000**	**1,343.8696**	**1,343.8696**	**0.2450**	**0.0000**	**1,349.9934**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.3969	11.4504	8.6094	0.0135	0.3156	0.8114	1.1271	0.0614	0.7744	0.8357	0.0000	1,343.8696	1,343.8696	0.2450	0.0000	1,349.9934
Maximum	**1.3969**	**11.4504**	**8.6094**	**0.0135**	**0.3156**	**0.8114**	**1.1271**	**0.0614**	**0.7744**	**0.8357**	**0.0000**	**1,343.8696**	**1,343.8696**	**0.2450**	**0.0000**	**1,349.9934**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Mobile	9.7500e-003	0.0511	0.1396	4.0000e-004	0.0306	5.5000e-004	0.0312	8.2000e-003	5.2000e-004	8.7100e-003		40.1438	40.1438	2.3600e-003		40.2028
Total	**0.0545**	**0.0516**	**0.1402**	**4.0000e-004**	**0.0306**	**5.9000e-004**	**0.0312**	**8.2000e-003**	**5.6000e-004**	**8.7500e-003**		**40.7051**	**40.7051**	**2.3700e-003**	**1.0000e-005**	**40.7674**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Mobile	9.7500e-003	0.0511	0.1396	4.0000e-004	0.0306	5.5000e-004	0.0312	8.2000e-003	5.2000e-004	8.7100e-003		40.1438	40.1438	2.3600e-003		40.2028
Total	**0.0545**	**0.0516**	**0.1402**	**4.0000e-004**	**0.0306**	**5.9000e-004**	**0.0312**	**8.2000e-003**	**5.6000e-004**	**8.7500e-003**		**40.7051**	**40.7051**	**2.3700e-003**	**1.0000e-005**	**40.7674**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	old baghouse demo	Demolition	12/1/2016	12/7/2016	5	5	
2	old baghouse foundation demo	Demolition	12/8/2016	12/14/2016	5	5	
3	baghouse pad paving	Paving	12/15/2016	12/21/2016	5	5	
4	baghouse installation	Building Construction	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
baghouse installation	Cranes	1	4.00	231	0.29
baghouse installation	Forklifts	1	4.00	89	0.20
baghouse installation	Generator Sets	1	4.00	84	0.74
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Welders	1	4.00	46	0.45
baghouse pad paving	Cement and Mortar Mixers	1	4.00	9	0.56
baghouse pad paving	Pavers	1	4.00	130	0.42
baghouse pad paving	Rollers	1	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
old baghouse demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	4	1.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.2 old baghouse demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.3 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723		1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**		**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.3 old baghouse foundation demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1969	0.0000	0.1969	0.0298	0.0000	0.0298			0.0000			0.0000
Off-Road	1.3177	11.2461	7.9887	0.0120		0.8093	0.8093		0.7723	0.7723	0.0000	1,189.1508	1,189.1508	0.2373		1,195.0828
Total	**1.3177**	**11.2461**	**7.9887**	**0.0120**	**0.1969**	**0.8093**	**1.0062**	**0.0298**	**0.7723**	**0.8022**	**0.0000**	**1,189.1508**	**1,189.1508**	**0.2373**		**1,195.0828**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.4 baghouse pad paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5767	5.7153	3.8503	5.5700e-003		0.3640	0.3640		0.3354	0.3354		567.2296	567.2296	0.1661		571.3821
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5767**	**5.7153**	**3.8503**	**5.5700e-003**		**0.3640**	**0.3640**		**0.3354**	**0.3354**		**567.2296**	**567.2296**	**0.1661**		**571.3821**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.4 baghouse pad paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5767	5.7153	3.8503	5.5700e-003		0.3640	0.3640		0.3354	0.3354	0.0000	567.2296	567.2296	0.1661		571.3821
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5767**	**5.7153**	**3.8503**	**5.5700e-003**		**0.3640**	**0.3640**		**0.3354**	**0.3354**	**0.0000**	**567.2296**	**567.2296**	**0.1661**		**571.3821**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0742	0.0557	0.5911	1.2100e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		120.4745	120.4745	5.0600e-003		120.6010
Total	**0.0792**	**0.2043**	**0.6207**	**1.5300e-003**	**0.1188**	**2.1300e-003**	**0.1209**	**0.0316**	**2.0100e-003**	**0.0336**		**154.7187**	**154.7187**	**7.6700e-003**		**154.9106**

3.5 baghouse installation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0821	8.6552	5.0433	8.2100e-003		0.5199	0.5199		0.4975	0.4975		794.2194	794.2194	0.1680		798.4195
Total	**1.0821**	**8.6552**	**5.0433**	**8.2100e-003**		**0.5199**	**0.5199**		**0.4975**	**0.4975**		**794.2194**	**794.2194**	**0.1680**		**798.4195**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.4200e-003	5.5700e-003	0.0591	1.2000e-004	0.0112	1.0000e-004	0.0113	2.9600e-003	9.0000e-005	3.0500e-003		12.0475	12.0475	5.1000e-004		12.0601
Total	**0.0124**	**0.1542**	**0.0888**	**4.4000e-004**	**0.0182**	**1.2700e-003**	**0.0194**	**4.8800e-003**	**1.2100e-003**	**6.0900e-003**		**46.2917**	**46.2917**	**3.1200e-003**		**46.3696**

3.5 baghouse installation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0821	8.6552	5.0433	8.2100e-003		0.5199	0.5199		0.4975	0.4975	0.0000	794.2194	794.2194	0.1680		798.4195
Total	**1.0821**	**8.6552**	**5.0433**	**8.2100e-003**		**0.5199**	**0.5199**		**0.4975**	**0.4975**	**0.0000**	**794.2194**	**794.2194**	**0.1680**		**798.4195**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.9800e-003	0.1486	0.0297	3.2000e-004	6.9900e-003	1.1700e-003	8.1700e-003	1.9200e-003	1.1200e-003	3.0400e-003		34.2442	34.2442	2.6100e-003		34.3095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.4200e-003	5.5700e-003	0.0591	1.2000e-004	0.0112	1.0000e-004	0.0113	2.9600e-003	9.0000e-005	3.0500e-003		12.0475	12.0475	5.1000e-004		12.0601
Total	**0.0124**	**0.1542**	**0.0888**	**4.4000e-004**	**0.0182**	**1.2700e-003**	**0.0194**	**4.8800e-003**	**1.2100e-003**	**6.0900e-003**		**46.2917**	**46.2917**	**3.1200e-003**		**46.3696**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.7500e-003	0.0511	0.1396	4.0000e-004	0.0306	5.5000e-004	0.0312	8.2000e-003	5.2000e-004	8.7100e-003		40.1438	40.1438	2.3600e-003		40.2028
Unmitigated	9.7500e-003	0.0511	0.1396	4.0000e-004	0.0306	5.5000e-004	0.0312	8.2000e-003	5.2000e-004	8.7100e-003		40.1438	40.1438	2.3600e-003		40.2028

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	3.36	3.36	3.36	14,400	14,400
Total	3.36	3.36	3.36	14,400	14,400

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
NaturalGas Unmitigated	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	4.76712	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Total		**5.0000e-005**	**4.7000e-004**	**3.9000e-004**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.5608**	**0.5608**	**1.0000e-005**	**1.0000e-005**	**0.5642**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.00476712	5.0000e-005	4.7000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5608	0.5608	1.0000e-005	1.0000e-005	0.5642
Total		**5.0000e-005**	**4.7000e-004**	**3.9000e-004**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.5608**	**0.5608**	**1.0000e-005**	**1.0000e-005**	**0.5642**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Unmitigated	0.0447	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.0800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0396					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	**0.0447**	**0.0000**	**2.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**4.4000e-004**	**4.4000e-004**	**0.0000**		**4.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 2 - New Baghouse/HEPA Installation (Annual)

R1430_one baghouse_20161220

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	2.00	1000sqft	0.05	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 2000 sq ft

Construction Phase - assumptions: 5 days for each baghouse demo/construction phase

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. one baghouse installation

Off-road Equipment - assumptions: default paving equipment, hp, and LF. Hr/d is from the R1155 EA. one baghouse installation

Off-road Equipment - default

Off-road Equipment - assumption

Off-road Equipment - assumption

Trips and VMT - assumptions

Demolition - assume 1000 sq ft for one baghouse and 1000 sq ft for one baghouse foundation

Grading -

R1430_one baghouse_20161220 - South Coast AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	5.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0113	0.0941	0.0672	1.1000e-004	1.9000e-003	6.2800e-003	8.1800e-003	3.9000e-004	5.9600e-003	6.3600e-003	0.0000	9.6567	9.6567	1.8900e-003	0.0000	9.7040
Maximum	**0.0113**	**0.0941**	**0.0672**	**1.1000e-004**	**1.9000e-003**	**6.2800e-003**	**8.1800e-003**	**3.9000e-004**	**5.9600e-003**	**6.3600e-003**	**0.0000**	**9.6567**	**9.6567**	**1.8900e-003**	**0.0000**	**9.7040**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.0113	0.0941	0.0672	1.1000e-004	1.9000e-003	6.2800e-003	8.1800e-003	3.9000e-004	5.9600e-003	6.3600e-003	0.0000	9.6567	9.6567	1.8900e-003	0.0000	9.7040
Maximum	**0.0113**	**0.0941**	**0.0672**	**1.1000e-004**	**1.9000e-003**	**6.2800e-003**	**8.1800e-003**	**3.9000e-004**	**5.9600e-003**	**6.3600e-003**	**0.0000**	**9.6567**	**9.6567**	**1.8900e-003**	**0.0000**	**9.7040**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1600e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.6291	2.6291	1.1000e-004	2.0000e-005	2.6387
Mobile	1.7400e-003	9.4800e-003	0.0259	7.0000e-005	5.4700e-003	1.0000e-004	5.5700e-003	1.4700e-003	9.0000e-005	1.5600e-003	0.0000	6.7209	6.7209	3.9000e-004	0.0000	6.7306
Waste						0.0000	0.0000		0.0000	0.0000	0.3816	0.0000	0.3816	0.0226	0.0000	0.9455
Water						0.0000	0.0000		0.0000	0.0000	0.1467	1.9188	2.0655	0.0152	3.7000e-004	2.5552
Total	**9.9100e-003**	**9.5700e-003**	**0.0260**	**7.0000e-005**	**5.4700e-003**	**1.1000e-004**	**5.5800e-003**	**1.4700e-003**	**1.0000e-004**	**1.5700e-003**	**0.5284**	**11.2688**	**11.7972**	**0.0382**	**3.9000e-004**	**12.8700**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.1600e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.6291	2.6291	1.1000e-004	2.0000e-005	2.6387
Mobile	1.7400e-003	9.4800e-003	0.0259	7.0000e-005	5.4700e-003	1.0000e-004	5.5700e-003	1.4700e-003	9.0000e-005	1.5600e-003	0.0000	6.7209	6.7209	3.9000e-004	0.0000	6.7306
Waste						0.0000	0.0000		0.0000	0.0000	0.3816	0.0000	0.3816	0.0226	0.0000	0.9455
Water						0.0000	0.0000		0.0000	0.0000	0.1467	1.9188	2.0655	0.0152	3.7000e-004	2.5552
Total	**9.9100e-003**	**9.5700e-003**	**0.0260**	**7.0000e-005**	**5.4700e-003**	**1.1000e-004**	**5.5800e-003**	**1.4700e-003**	**1.0000e-004**	**1.5700e-003**	**0.5284**	**11.2688**	**11.7972**	**0.0382**	**3.9000e-004**	**12.8700**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	old baghouse demo	Demolition	12/1/2016	12/7/2016	5	5	
2	old baghouse foundation demo	Demolition	12/8/2016	12/14/2016	5	5	
3	baghouse pad paving	Paving	12/15/2016	12/21/2016	5	5	
4	baghouse installation	Building Construction	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
old baghouse demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
old baghouse foundation demo	Concrete/Industrial Saws	1	8.00	81	0.73
old baghouse foundation demo	Rubber Tired Dozers	1	1.00	247	0.40
old baghouse foundation demo	Tractors/Loaders/Backhoes	2	6.00	97	0.37
baghouse installation	Cranes	1	4.00	231	0.29
baghouse installation	Forklifts	1	4.00	89	0.20
baghouse installation	Generator Sets	1	4.00	84	0.74
baghouse installation	Tractors/Loaders/Backhoes	0	4.00	97	0.37
baghouse installation	Welders	1	4.00	46	0.45
baghouse pad paving	Cement and Mortar Mixers	1	4.00	9	0.56
baghouse pad paving	Pavers	1	4.00	130	0.42
baghouse pad paving	Rollers	1	4.00	80	0.38
baghouse pad paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
old baghouse demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
old baghouse foundation demo	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse installation	4	1.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
baghouse pad paving	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 old baghouse demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0281	0.0200	3.0000e-005		2.0200e-003	2.0200e-003		1.9300e-003	1.9300e-003	0.0000	2.6970	2.6970	5.4000e-004	0.0000	2.7104
Total	**3.2900e-003**	**0.0281**	**0.0200**	**3.0000e-005**	**4.9000e-004**	**2.0200e-003**	**2.5100e-003**	**7.0000e-005**	**1.9300e-003**	**2.0000e-003**	**0.0000**	**2.6970**	**2.6970**	**5.4000e-004**	**0.0000**	**2.7104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.2 old baghouse demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0281	0.0200	3.0000e-005		2.0200e-003	2.0200e-003		1.9300e-003	1.9300e-003	0.0000	2.6970	2.6970	5.4000e-004	0.0000	2.7104
Total	**3.2900e-003**	**0.0281**	**0.0200**	**3.0000e-005**	**4.9000e-004**	**2.0200e-003**	**2.5100e-003**	**7.0000e-005**	**1.9300e-003**	**2.0000e-003**	**0.0000**	**2.6970**	**2.6970**	**5.4000e-004**	**0.0000**	**2.7104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.3 old baghouse foundation demo - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0281	0.0200	3.0000e-005		2.0200e-003	2.0200e-003		1.9300e-003	1.9300e-003	0.0000	2.6970	2.6970	5.4000e-004	0.0000	2.7104
Total	**3.2900e-003**	**0.0281**	**0.0200**	**3.0000e-005**	**4.9000e-004**	**2.0200e-003**	**2.5100e-003**	**7.0000e-005**	**1.9300e-003**	**2.0000e-003**	**0.0000**	**2.6970**	**2.6970**	**5.4000e-004**	**0.0000**	**2.7104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.3 old baghouse foundation demo - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2900e-003	0.0281	0.0200	3.0000e-005		2.0200e-003	2.0200e-003		1.9300e-003	1.9300e-003	0.0000	2.6970	2.6970	5.4000e-004	0.0000	2.7104
Total	**3.2900e-003**	**0.0281**	**0.0200**	**3.0000e-005**	**4.9000e-004**	**2.0200e-003**	**2.5100e-003**	**7.0000e-005**	**1.9300e-003**	**2.0000e-003**	**0.0000**	**2.6970**	**2.6970**	**5.4000e-004**	**0.0000**	**2.7104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.4 baghouse pad paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4400e-003	0.0143	9.6300e-003	1.0000e-005		9.1000e-004	9.1000e-004		8.4000e-004	8.4000e-004	0.0000	1.2865	1.2865	3.8000e-004	0.0000	1.2959
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4400e-003**	**0.0143**	**9.6300e-003**	**1.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.2865**	**1.2865**	**3.8000e-004**	**0.0000**	**1.2959**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.4 baghouse pad paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4400e-003	0.0143	9.6300e-003	1.0000e-005		9.1000e-004	9.1000e-004		8.4000e-004	8.4000e-004	0.0000	1.2865	1.2865	3.8000e-004	0.0000	1.2959
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4400e-003**	**0.0143**	**9.6300e-003**	**1.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.2865**	**1.2865**	**3.8000e-004**	**0.0000**	**1.2959**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.4000e-004	1.5200e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2779	0.2779	1.0000e-005	0.0000	0.2782
Total	**1.8000e-004**	**5.2000e-004**	**1.5900e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**7.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.3563**	**0.3563**	**2.0000e-005**	**0.0000**	**0.3567**

3.5 baghouse installation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7100e-003	0.0216	0.0126	2.0000e-005		1.3000e-003	1.3000e-003		1.2400e-003	1.2400e-003	0.0000	1.8013	1.8013	3.8000e-004	0.0000	1.8108
Total	**2.7100e-003**	**0.0216**	**0.0126**	**2.0000e-005**		**1.3000e-003**	**1.3000e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**1.8013**	**1.8013**	**3.8000e-004**	**0.0000**	**1.8108**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0278	0.0278	0.0000	0.0000	0.0278
Total	**3.0000e-005**	**3.9000e-004**	**2.2000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1062**	**0.1062**	**1.0000e-005**	**0.0000**	**0.1064**

3.5 baghouse installation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7100e-003	0.0216	0.0126	2.0000e-005		1.3000e-003	1.3000e-003		1.2400e-003	1.2400e-003	0.0000	1.8013	1.8013	3.8000e-004	0.0000	1.8108
Total	**2.7100e-003**	**0.0216**	**0.0126**	**2.0000e-005**		**1.3000e-003**	**1.3000e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**1.8013**	**1.8013**	**3.8000e-004**	**0.0000**	**1.8108**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.8000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0784	0.0784	1.0000e-005	0.0000	0.0786
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0278	0.0278	0.0000	0.0000	0.0278
Total	**3.0000e-005**	**3.9000e-004**	**2.2000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1062**	**0.1062**	**1.0000e-005**	**0.0000**	**0.1064**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7400e-003	9.4800e-003	0.0259	7.0000e-005	5.4700e-003	1.0000e-004	5.5700e-003	1.4700e-003	9.0000e-005	1.5600e-003	0.0000	6.7209	6.7209	3.9000e-004	0.0000	6.7306
Unmitigated	1.7400e-003	9.4800e-003	0.0259	7.0000e-005	5.4700e-003	1.0000e-004	5.5700e-003	1.4700e-003	9.0000e-005	1.5600e-003	0.0000	6.7209	6.7209	3.9000e-004	0.0000	6.7306

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	3.36	3.36	3.36	14,400	14,400
Total	3.36	3.36	3.36	14,400	14,400

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.5362	2.5362	1.0000e-004	2.0000e-005	2.5453
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.5362	2.5362	1.0000e-004	2.0000e-005	2.5453
NaturalGas Mitigated	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0929	0.0929	0.0000	0.0000	0.0934
NaturalGas Unmitigated	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0929	0.0929	0.0000	0.0000	0.0934

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	1740	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0929	0.0929	0.0000	0.0000	0.0934
Total		**1.0000e-005**	**9.0000e-005**	**7.0000e-005**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0929**	**0.0929**	**0.0000**	**0.0000**	**0.0934**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	1740	1.0000e-005	9.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0929	0.0929	0.0000	0.0000	0.0934
Total		**1.0000e-005**	**9.0000e-005**	**7.0000e-005**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0929**	**0.0929**	**0.0000**	**0.0000**	**0.0934**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	7960	2.5362	1.0000e-004	2.0000e-005	2.5453
Total		**2.5362**	**1.0000e-004**	**2.0000e-005**	**2.5453**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	7960	2.5362	1.0000e-004	2.0000e-005	2.5453
Total		**2.5362**	**1.0000e-004**	**2.0000e-005**	**2.5453**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.1600e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Unmitigated	8.1600e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	**8.1600e-003**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	**8.1600e-003**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0000**	**5.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.0655	0.0152	3.7000e-004	2.5552
Unmitigated	2.0655	0.0152	3.7000e-004	2.5552

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.4625 / 0	2.0655	0.0152	3.7000e-004	2.5552
Total		**2.0655**	**0.0152**	**3.7000e-004**	**2.5552**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.4625 / 0	2.0655	0.0152	3.7000e-004	2.5552
Total		**2.0655**	**0.0152**	**3.7000e-004**	**2.5552**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.3816	0.0226	0.0000	0.9455
Unmitigated	0.3816	0.0226	0.0000	0.9455

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	1.88	0.3816	0.0226	0.0000	0.9455
Total		**0.3816**	**0.0226**	**0.0000**	**0.9455**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	1.88	0.3816	0.0226	0.0000	0.9455
Total		**0.3816**	**0.0226**	**0.0000**	**0.9455**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 3 - Building Improvement For Total Enclosure (Summer)

R1430_Total Enclosure Improvement_20161220

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 1000 sq ft

Construction Phase - assumptions: 5 days construction

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Trips and VMT - assumptions 10 hauling trips

Demolition -

Grading -

Off-road Equipment - assumption

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	PhaseEndDate	4/19/2017	12/7/2016
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	0.7868	6.9683	3.2792	6.5400e-003	0.0350	0.3563	0.3913	9.5800e-003	0.3337	0.3433	0.0000	656.7851	656.7851	0.1520	0.0000	660.5847
Maximum	**0.7868**	**6.9683**	**3.2792**	**6.5400e-003**	**0.0350**	**0.3563**	**0.3913**	**9.5800e-003**	**0.3337**	**0.3433**	**0.0000**	**656.7851**	**656.7851**	**0.1520**	**0.0000**	**660.5847**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	0.7868	6.9683	3.2792	6.5400e-003	0.0350	0.3563	0.3913	9.5800e-003	0.3337	0.3433	0.0000	656.7851	656.7851	0.1520	0.0000	660.5847
Maximum	**0.7868**	**6.9683**	**3.2792**	**6.5400e-003**	**0.0350**	**0.3563**	**0.3913**	**9.5800e-003**	**0.3337**	**0.3433**	**0.0000**	**656.7851**	**656.7851**	**0.1520**	**0.0000**	**660.5847**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Mobile	5.0700e-003	0.0247	0.0749	2.1000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		21.2022	21.2022	1.1900e-003		21.2320
Total	**0.0275**	**0.0250**	**0.0752**	**2.1000e-004**	**0.0153**	**2.9000e-004**	**0.0156**	**4.1000e-003**	**2.8000e-004**	**4.3800e-003**		**21.4828**	**21.4828**	**1.2000e-003**	**1.0000e-005**	**21.5144**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Mobile	5.0700e-003	0.0247	0.0749	2.1000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		21.2022	21.2022	1.1900e-003		21.2320
Total	**0.0275**	**0.0250**	**0.0752**	**2.1000e-004**	**0.0153**	**2.9000e-004**	**0.0156**	**4.1000e-003**	**2.8000e-004**	**4.3800e-003**		**21.4828**	**21.4828**	**1.2000e-003**	**1.0000e-005**	**21.5144**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction/improvement	Building Construction	12/1/2016	12/7/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction/improvement	Cranes	1	4.00	231	0.29
Building Construction/improvement	Forklifts	1	4.00	89	0.20
Building Construction/improvement	Welders	1	4.00	46	0.45
Building Construction/improvement	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction/improve	3	0.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction/improvement - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7626	6.2378	3.1418	4.9200e-003		0.3505	0.3505		0.3282	0.3282		482.7021	482.7021	0.1395		486.1896
Total	**0.7626**	**6.2378**	**3.1418**	**4.9200e-003**		**0.3505**	**0.3505**		**0.3282**	**0.3282**		**482.7021**	**482.7021**	**0.1395**		**486.1896**

3.2 Building Construction/improvement - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0243	0.7305	0.1374	1.6200e-003	0.0350	5.8000e-003	0.0408	9.5800e-003	5.5500e-003	0.0151		174.0830	174.0830	0.0125		174.3951
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0243**	**0.7305**	**0.1374**	**1.6200e-003**	**0.0350**	**5.8000e-003**	**0.0408**	**9.5800e-003**	**5.5500e-003**	**0.0151**		**174.0830**	**174.0830**	**0.0125**		**174.3951**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7626	6.2378	3.1418	4.9200e-003		0.3505	0.3505		0.3282	0.3282	0.0000	482.7021	482.7021	0.1395		486.1896
Total	**0.7626**	**6.2378**	**3.1418**	**4.9200e-003**		**0.3505**	**0.3505**		**0.3282**	**0.3282**	**0.0000**	**482.7021**	**482.7021**	**0.1395**		**486.1896**

3.2 Building Construction/improvement - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0243	0.7305	0.1374	1.6200e-003	0.0350	5.8000e-003	0.0408	9.5800e-003	5.5500e-003	0.0151		174.0830	174.0830	0.0125		174.3951
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0243**	**0.7305**	**0.1374**	**1.6200e-003**	**0.0350**	**5.8000e-003**	**0.0408**	**9.5800e-003**	**5.5500e-003**	**0.0151**		**174.0830**	**174.0830**	**0.0125**		**174.3951**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.0700e-003	0.0247	0.0749	2.1000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		21.2022	21.2022	1.1900e-003		21.2320
Unmitigated	5.0700e-003	0.0247	0.0749	2.1000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		21.2022	21.2022	1.1900e-003		21.2320

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1.68	1.68	1.68	7,200	7,200
Total	1.68	1.68	1.68	7,200	7,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
NaturalGas Unmitigated	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	2.38356	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Total		**3.0000e-005**	**2.3000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.2804**	**0.2804**	**1.0000e-005**	**1.0000e-005**	**0.2821**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.00238356	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Total		**3.0000e-005**	**2.3000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.2804**	**0.2804**	**1.0000e-005**	**1.0000e-005**	**0.2821**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 3 - Building Improvement For Total Enclosure (Winter)

R1430_Total Enclosure Improvement_20161220

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 1000 sq ft

Construction Phase - assumptions: 5 days construction

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Trips and VMT - assumptions 10 hauling trips

Demolition -

Grading -

Off-road Equipment - assumption

R1430_Total Enclosure Improvement_20161220 - South Coast AQMD Air District, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	PhaseEndDate	4/19/2017	12/7/2016
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	0.7874	6.9809	3.2901	6.5100e-003	0.0350	0.3564	0.3914	9.5800e-003	0.3338	0.3434	0.0000	653.9232	653.9232	0.1526	0.0000	657.7372
Maximum	**0.7874**	**6.9809**	**3.2901**	**6.5100e-003**	**0.0350**	**0.3564**	**0.3914**	**9.5800e-003**	**0.3338**	**0.3434**	**0.0000**	**653.9232**	**653.9232**	**0.1526**	**0.0000**	**657.7372**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	0.7874	6.9809	3.2901	6.5100e-003	0.0350	0.3564	0.3914	9.5800e-003	0.3338	0.3434	0.0000	653.9232	653.9232	0.1526	0.0000	657.7372
Maximum	**0.7874**	**6.9809**	**3.2901**	**6.5100e-003**	**0.0350**	**0.3564**	**0.3914**	**9.5800e-003**	**0.3338**	**0.3434**	**0.0000**	**653.9232**	**653.9232**	**0.1526**	**0.0000**	**657.7372**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Mobile	4.8800e-003	0.0256	0.0698	2.0000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		20.0719	20.0719	1.1800e-003		20.1014
Total	**0.0273**	**0.0258**	**0.0701**	**2.0000e-004**	**0.0153**	**2.9000e-004**	**0.0156**	**4.1000e-003**	**2.8000e-004**	**4.3800e-003**		**20.3525**	**20.3525**	**1.1900e-003**	**1.0000e-005**	**20.3837**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Mobile	4.8800e-003	0.0256	0.0698	2.0000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		20.0719	20.0719	1.1800e-003		20.1014
Total	**0.0273**	**0.0258**	**0.0701**	**2.0000e-004**	**0.0153**	**2.9000e-004**	**0.0156**	**4.1000e-003**	**2.8000e-004**	**4.3800e-003**		**20.3525**	**20.3525**	**1.1900e-003**	**1.0000e-005**	**20.3837**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction/improvement	Building Construction	12/1/2016	12/7/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction/improvement	Cranes	1	4.00	231	0.29
Building Construction/improvement	Forklifts	1	4.00	89	0.20
Building Construction/improvement	Welders	1	4.00	46	0.45
Building Construction/improvement	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction/improve	3	0.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction/improvement - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7626	6.2378	3.1418	4.9200e-003		0.3505	0.3505		0.3282	0.3282		482.7021	482.7021	0.1395		486.1896
Total	**0.7626**	**6.2378**	**3.1418**	**4.9200e-003**		**0.3505**	**0.3505**		**0.3282**	**0.3282**		**482.7021**	**482.7021**	**0.1395**		**486.1896**

3.2 Building Construction/improvement - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	0.7430	0.1483	1.5900e-003	0.0350	5.8700e-003	0.0408	9.5800e-003	5.6200e-003	0.0152		171.2211	171.2211	0.0131		171.5476
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0249**	**0.7430**	**0.1483**	**1.5900e-003**	**0.0350**	**5.8700e-003**	**0.0408**	**9.5800e-003**	**5.6200e-003**	**0.0152**		**171.2211**	**171.2211**	**0.0131**		**171.5476**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7626	6.2378	3.1418	4.9200e-003		0.3505	0.3505		0.3282	0.3282	0.0000	482.7021	482.7021	0.1395		486.1896
Total	**0.7626**	**6.2378**	**3.1418**	**4.9200e-003**		**0.3505**	**0.3505**		**0.3282**	**0.3282**	**0.0000**	**482.7021**	**482.7021**	**0.1395**		**486.1896**

3.2 Building Construction/improvement - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	0.7430	0.1483	1.5900e-003	0.0350	5.8700e-003	0.0408	9.5800e-003	5.6200e-003	0.0152		171.2211	171.2211	0.0131		171.5476
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0249**	**0.7430**	**0.1483**	**1.5900e-003**	**0.0350**	**5.8700e-003**	**0.0408**	**9.5800e-003**	**5.6200e-003**	**0.0152**		**171.2211**	**171.2211**	**0.0131**		**171.5476**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.8800e-003	0.0256	0.0698	2.0000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		20.0719	20.0719	1.1800e-003		20.1014
Unmitigated	4.8800e-003	0.0256	0.0698	2.0000e-004	0.0153	2.7000e-004	0.0156	4.1000e-003	2.6000e-004	4.3600e-003		20.0719	20.0719	1.1800e-003		20.1014

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1.68	1.68	1.68	7,200	7,200
Total	1.68	1.68	1.68	7,200	7,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
NaturalGas Unmitigated	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	2.38356	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Total		**3.0000e-005**	**2.3000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.2804**	**0.2804**	**1.0000e-005**	**1.0000e-005**	**0.2821**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0.00238356	3.0000e-005	2.3000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.2804	0.2804	1.0000e-005	1.0000e-005	0.2821
Total		**3.0000e-005**	**2.3000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.2804**	**0.2804**	**1.0000e-005**	**1.0000e-005**	**0.2821**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0224**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Files and Assumptions

Scenario 3 - Building Improvement For Total Enclosure (Annual)

R1430_Total Enclosure Improvement_20161220

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - assume 2016/12/1 to start the construction and 2017 is the operational year

Land Use - assumption: 1000 sq ft

Construction Phase - assumptions: 5 days construction

Off-road Equipment - default hp, and LF. Equipment type and hr/day are from the previous EA for R1155 assumptions. Double the unit amount since two baghouses will be installed at the same time (worst case)

Trips and VMT - assumptions 10 hauling trips

Demolition -

Grading -

Off-road Equipment - assumption

R1430_Total Enclosure Improvement_20161220 - South Coast AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	PhaseEndDate	4/19/2017	12/7/2016
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Welders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2018	2017
tblTripsAndVMT	HaulingTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.9700e-003	0.0175	8.2100e-003	2.0000e-005	9.0000e-005	8.9000e-004	9.8000e-004	2.0000e-005	8.3000e-004	8.6000e-004	0.0000	1.4868	1.4868	3.5000e-004	0.0000	1.4955
Maximum	**1.9700e-003**	**0.0175**	**8.2100e-003**	**2.0000e-005**	**9.0000e-005**	**8.9000e-004**	**9.8000e-004**	**2.0000e-005**	**8.3000e-004**	**8.6000e-004**	**0.0000**	**1.4868**	**1.4868**	**3.5000e-004**	**0.0000**	**1.4955**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.9700e-003	0.0175	8.2100e-003	2.0000e-005	9.0000e-005	8.9000e-004	9.8000e-004	2.0000e-005	8.3000e-004	8.6000e-004	0.0000	1.4868	1.4868	3.5000e-004	0.0000	1.4955
Maximum	**1.9700e-003**	**0.0175**	**8.2100e-003**	**2.0000e-005**	**9.0000e-005**	**8.9000e-004**	**9.8000e-004**	**2.0000e-005**	**8.3000e-004**	**8.6000e-004**	**0.0000**	**1.4868**	**1.4868**	**3.5000e-004**	**0.0000**	**1.4955**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3145	1.3145	5.0000e-005	1.0000e-005	1.3194
Mobile	8.7000e-004	4.7400e-003	0.0129	4.0000e-005	2.7400e-003	5.0000e-005	2.7900e-003	7.3000e-004	5.0000e-005	7.8000e-004	0.0000	3.3604	3.3604	1.9000e-004	0.0000	3.3653
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.9594	1.0328	7.5700e-003	1.9000e-004	1.2776
Total	**4.9500e-003**	**4.7800e-003**	**0.0130**	**4.0000e-005**	**2.7400e-003**	**5.0000e-005**	**2.7900e-003**	**7.3000e-004**	**5.0000e-005**	**7.8000e-004**	**0.2642**	**5.6344**	**5.8986**	**0.0191**	**2.0000e-004**	**6.4350**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.3145	1.3145	5.0000e-005	1.0000e-005	1.3194
Mobile	8.7000e-004	4.7400e-003	0.0129	4.0000e-005	2.7400e-003	5.0000e-005	2.7900e-003	7.3000e-004	5.0000e-005	7.8000e-004	0.0000	3.3604	3.3604	1.9000e-004	0.0000	3.3653
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.9594	1.0328	7.5700e-003	1.9000e-004	1.2776
Total	**4.9500e-003**	**4.7800e-003**	**0.0130**	**4.0000e-005**	**2.7400e-003**	**5.0000e-005**	**2.7900e-003**	**7.3000e-004**	**5.0000e-005**	**7.8000e-004**	**0.2642**	**5.6344**	**5.8986**	**0.0191**	**2.0000e-004**	**6.4350**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction/improvement	Building Construction	12/1/2016	12/7/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction/improvement	Cranes	1	4.00	231	0.29
Building Construction/improvement	Forklifts	1	4.00	89	0.20
Building Construction/improvement	Welders	1	4.00	46	0.45
Building Construction/improvement	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction/improve	3	0.00	0.00	10.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction/improvement - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9100e-003	0.0156	7.8500e-003	1.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	1.0948	1.0948	3.2000e-004	0.0000	1.1027
Total	**1.9100e-003**	**0.0156**	**7.8500e-003**	**1.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**1.0948**	**1.0948**	**3.2000e-004**	**0.0000**	**1.1027**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	1.8900e-003	3.6000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3921	0.3921	3.0000e-005	0.0000	0.3928
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-005**	**1.8900e-003**	**3.6000e-004**	**0.0000**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.3921**	**0.3921**	**3.0000e-005**	**0.0000**	**0.3928**

3.2 Building Construction/improvement - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9100e-003	0.0156	7.8500e-003	1.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	1.0948	1.0948	3.2000e-004	0.0000	1.1027
Total	**1.9100e-003**	**0.0156**	**7.8500e-003**	**1.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**1.0948**	**1.0948**	**3.2000e-004**	**0.0000**	**1.1027**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	1.8900e-003	3.6000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	2.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3921	0.3921	3.0000e-005	0.0000	0.3928
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-005**	**1.8900e-003**	**3.6000e-004**	**0.0000**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.3921**	**0.3921**	**3.0000e-005**	**0.0000**	**0.3928**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.7000e-004	4.7400e-003	0.0129	4.0000e-005	2.7400e-003	5.0000e-005	2.7900e-003	7.3000e-004	5.0000e-005	7.8000e-004	0.0000	3.3604	3.3604	1.9000e-004	0.0000	3.3653
Unmitigated	8.7000e-004	4.7400e-003	0.0129	4.0000e-005	2.7400e-003	5.0000e-005	2.7900e-003	7.3000e-004	5.0000e-005	7.8000e-004	0.0000	3.3604	3.3604	1.9000e-004	0.0000	3.3653

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	1.68	1.68	1.68	7,200	7,200
Total	1.68	1.68	1.68	7,200	7,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.542123	0.045435	0.198009	0.129481	0.019131	0.005886	0.019249	0.030178	0.001920	0.002234	0.004581	0.000701	0.001073

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.2681	1.2681	5.0000e-005	1.0000e-005	1.2727
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1.2681	1.2681	5.0000e-005	1.0000e-005	1.2727
NaturalGas Mitigated	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0464	0.0464	0.0000	0.0000	0.0467
NaturalGas Unmitigated	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0464	0.0464	0.0000	0.0000	0.0467

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	870	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0464	0.0464	0.0000	0.0000	0.0467
Total		**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0464**	**0.0464**	**0.0000**	**0.0000**	**0.0467**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	870	0.0000	4.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0464	0.0464	0.0000	0.0000	0.0467
Total		**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0464**	**0.0464**	**0.0000**	**0.0000**	**0.0467**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	3980	1.2681	5.0000e-005	1.0000e-005	1.2727
Total		**1.2681**	**5.0000e-005**	**1.0000e-005**	**1.2727**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	3980	1.2681	5.0000e-005	1.0000e-005	1.2727
Total		**1.2681**	**5.0000e-005**	**1.0000e-005**	**1.2727**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.0328	7.5700e-003	1.9000e-004	1.2776
Unmitigated	1.0328	7.5700e-003	1.9000e-004	1.2776

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.23125 / 0	1.0328	7.5700e-003	1.9000e-004	1.2776
Total		**1.0328**	**7.5700e-003**	**1.9000e-004**	**1.2776**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Unrefrigerated Warehouse-No Rail	0.23125 / 0	1.0328	7.5700e-003	1.9000e-004	1.2776
Total		**1.0328**	**7.5700e-003**	**1.9000e-004**	**1.2776**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Unrefrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B-2

Construction Emissions Summary and Calculations

PR 1430 Construction Emissions Summary

(2017/1/8 rev.)

Estimated Maximum Construction Emissions by Pollutants (lbs/day)

Activity	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Scenario 1 - New Building Construction						
A. Demolition of building	1.42	12.16	8.75	0.02	1.46	0.89
B. Demolition of baghouse foundation	1.40	11.60	8.64	0.01	1.37	0.88
C. Demolition of baghouse	1.40	11.60	8.64	0.01	1.33	0.87
D. Grading	1.58	20.69	10.43	0.04	2.20	1.34
E. Building construction	1.30	12.96	8.22	0.01	0.89	0.80
F. Building paving	1.18	10.33	8.33	0.01	0.83	0.62
G. Baghouse pad paving	1.20	10.87	8.73	0.01	0.90	0.67
H. Baghouse installation	1.97	16.30	9.95	0.02	0.97	0.90
Scenario 2 - New Baghouse/HEPA Installation						
E. Building construction	0.79	6.98	3.29	0.01	0.39	0.34
B. Demolition of baghouse foundation	1.40	11.45	8.61	0.01	1.13	0.84
C. Demolition of baghouse	1.40	11.45	8.61	0.01	1.13	0.84
G. Baghouse pad paving	0.66	5.92	4.47	0.01	0.48	0.37
H. Baghouse installation	1.09	8.81	5.13	0.01	0.54	0.50
Scenario 3 - Building Improvement for Total Enclosure						
E. Building construction	0.79	6.98	3.29	0.01	0.39	0.34
Maximum Emissions	**6.00**	**64.00**	**40.00**	**0.08**	**5.60**	**4.10**

Reference: emissions are from CalEEMod 2016

PR1430 Construction GHG Emissions

22 total facilities

	MT	# of facility	Total MT
construction of 1 new building (with baghouse construction)	75.0	5	375.0
construction of 1 baghouse w/ or w/o HEPA	9.7	12	116.4
building improvement for total enclosure (only)	1.5	5	7.5
Total construction and amortized			16.63

PR 1430 Solid Waste Calculations

	cu. Yd	#	Total cu. Yd
Demolition of existing old baghouses and foundation (one)	640	26	16640
Demolition of existing building - Press Forge	600	1	600
Demolition of existing building - one of other 4 facilities	300	4	1200
			18440

PR 1430 Traffic Calculations

	cu yd per truck	total soil I/O	Total trucks required	Total trips	round trips /day
grading	16	1200	75	150	30

		One baghouse construction				**New building and baghouse construction**								
from CalEEMod	**Building Improvement**	old baghouse demo	old foundation demo	new foundation	new baghouse	old building demo	old 2 baghouse demo	old 2 foundation demo	grading	building construction	paving	2 new foundation	2 new baghouses	**Max**
Worker vehicle	-	2	2	1	1	2	2	2	2	5	4	4	1	**15**
Hauling trucks	2	1	1	1	1	5	2	2	30	2	1	2	2	**36**

APPENDIX B-3

Operational Emissions and Calculations

The information presented on pages 1 and 2 of this appendix are calculations that were relied upon in the analysis for the Draft EA. Subsequent to the release of the Draft EA for public review and comment, minor revisions were made to the project that required adjustments to the calculations. These adjusted calculations can be found on pages 3 and 4 and they supersede the calculations on pages 1 and 2. Finally, no changes were necessary to the calculations on page 5.

PR 1430 Operation Emissions **For the Draft EA**

(2017/01/08 rev.)

Summary

Key Requirements: Operation Phase	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-
Point Source Emission Controls	1.41	1.21	0.70	0.30	0.22	0.01
Housekeeping	9.47	15.92	1.44	1.11	2.97	0.02
Source Testing	1.14	1.13	0.34	0.20	0.20	0.00
Total	**12.02**	**18.26**	**2.49**	**1.61**	**3.39**	**0.03**

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr	All facilities Max. # used/day	All facilities Max. # used/yr
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-	18.23	0.00	0.00	18.30	32	32
Mobile Source - Diesel Trucks (MDT)	0.53	0.15	0.71	0.20	0.04	0.01	0.89	-	-	0.89	22	44
Roof top cleaning (aerial lift)	9.21	15.84	1.09	1.00	2.95	0.02	2.77	0.00	0.00	2.82	11	44
Source Testing (LDT)	2.29	2.27	0.69	0.40	0.40	0.01	0.72	-	-	0.72	22	44
Total	**12.02**	**18.26**	**2.49**	**1.61**	**3.39**	**0.03**	**22.62**	**0.00**	**0.00**	**22.73**		

Note:

1. 7 total enclosurer facilities will have 6 new negative air system operation (using 6 blowers or similar devices)
2. It is conservatively assumed that each facility will utilize 1 waste/wastewater disposal truck (MDT), 1 filter replacement truck(MDT), 1 source testing truck (LDT), 1 filter inspection truck (LDT), and 1 aerial lift.
3. Assumed every year 2 MDT round trips, 2 LDT round trips, and 2 times of aerial lift use will occur in every facility.
4. Assume in the worst day, there will be 22 MDT, 22 LDT and 11 aerial lifts used in 11 overlapping facilities

Aerial Lift

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e	Usage, hr/day
lb/hr	0.21	0.36	0.02	0.02	0.07	0.00	34.72	0.01	0.01	36.57	4
lb/day, MT/day for GHG	0.84	1.44	0.10	0.09	0.27	0.00	0.06	0.00	0.00	0.06	

EF: from OFFROAD2012

Light-Duty Truck (LDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	1.14	1.15	0.35	0.20	0.20	0.00	406.56			406.56
g/vehicle/day (IDLEX)	1.42	0.75	0.16	0.16	0.19	0.00	112.36			112.36
lb/day, MT/day for GHG	0.10	0.10	0.03	0.02	0.02	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Medium-Duty Truck (MDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	0.26	0.08	0.37	0.10	0.02	0.00	505.00			505.00
g/vehicle (IDLEX)	0.33	0.05	0.01	0.01	0.02	0.00	139.57			139.57
lb/day, MT/day for GHG	0.02	0.01	0.03	0.01	0.00	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

PR 1430 Operation- Energy and GHG

Baghouse blower and negative air system/blower

	Consumption (GW-h/yr)	Consumption in MWh/yr
Blower (100 bhp)	0.001788	1.788

Ref: R1420.2 EA

	CO2	CH4	N2O	CO2e
Intensity (lb/MWhr)	702.44	0.03	0.01	704.95
MT/yr for GHG	0.57	0.00	0.00	0.57

Max. # of blowers (baghouse+negative air)	Max. Total Energy Consumption (MWh/yr)
32	57.216

PR 1430 Operation Emissions **For the Final EA**

(2017/02/08 rev.)

Summary

Key Requirements: Operation Phase	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-
Point Source Emission Controls	1.41	1.21	0.70	0.30	0.22	0.01
Housekeeping	9.47	15.92	1.44	1.11	2.97	0.02
Source Testing	1.14	1.13	0.34	0.20	0.20	0.00
Total	**12.02**	**18.26**	**2.49**	**1.61**	**3.39**	**0.03**

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr	All facilities Max. # used/day	All facilities Max. # used/yr
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-	20.51	0.00	0.00	20.58	36	36
Mobile Source - Diesel Trucks (MDT)	0.53	0.15	0.71	0.20	0.04	0.01	0.89	-	-	0.89	22	44
Roof top cleaning (aerial lift)	9.21	15.84	1.09	1.00	2.95	0.02	2.77	0.00	0.00	2.82	11	44
Source Testing (LDT)	2.29	2.27	0.69	0.40	0.40	0.01	0.72	-	-	0.72	22	44
Total	**12.02**	**18.26**	**2.49**	**1.61**	**3.39**	**0.03**	**24.89**	**0.00**	**0.00**	**25.02**		

Note:

1. 11 total enclosurer facilities will have 10 new negative air system operation (using 6 blowers or similar devices)
2. It is conservatively assumed that each facility will utilize 1 waste/wastewater disposal truck (MDT), 1 filter replacement truck(MDT), 1 source testing truck (LDT), 1 filter inspection truck (LDT), and 1 aerial lift.
3. Assumed every year 2 MDT round trips, 2 LDT round trips, and 2 times of aerial lift use will occur in every facility.
4. Assume in the worst day, there will be 22 MDT, 22 LDT and 11 aerial lifts used in 11 overlapping facilities

Aerial Lift

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e	Usage, hr/day
lb/hr	0.21	0.36	0.02	0.02	0.07	0.00	34.72	0.01	0.01	36.57	4
lb/day, MT/day for GHG	0.84	1.44	0.10	0.09	0.27	0.00	0.06	0.00	0.00	0.06	

EF: from OFFROAD2012

Light-Duty Truck (LDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	1.14	1.15	0.35	0.20	0.20	0.00	406.56			406.56
g/vehicle/day (IDLEX)	1.42	0.75	0.16	0.16	0.19	0.00	112.36			112.36
lb/day, MT/day for GHG	0.10	0.10	0.03	0.02	0.02	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Medium-Duty Truck (MDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	0.26	0.08	0.37	0.10	0.02	0.00	505.00			505.00
g/vehicle (IDLEX)	0.33	0.05	0.01	0.01	0.02	0.00	139.57			139.57
lb/day, MT/day for GHG	0.02	0.01	0.03	0.01	0.00	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

PR 1430 Operation- Energy and GHG

Baghouse blower and negative air system/blower

	Consumption (GW-h/yr)	Consumption in MWh/yr
Blower (100 bhp)	0.001788	1.788

Ref: R1420.2 EA

	CO2	CH4	N2O	CO2e
Intensity (lb/MWhr)	702.44	0.03	0.01	704.95
MT/yr for GHG	0.57	0.00	0.00	0.57

Max. # of blowers (baghouse+negative air)	Max. Total Energy Consumption (MWh/yr)
36	64.368

PR 1430 Operation and Construction Overlap Emissions (overlap phase)

(2017/01/08 rev.)

Summary

Operation and Construction Overlap	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	Max. # used/day during overlap
Total Enclosurer, Baghouse, HEPA	-	-	-	-	-	-	
Mobile Source - Diesel Trucks (MDT)	0.10	0.03	0.13	0.04	0.01	0.00	4
Roof top cleaning (aerial lift)	1.67	2.88	0.20	0.18	0.54	0.00	2
Source Testing (LDT)	0.42	0.41	0.12	0.07	0.07	0.00	4
Operation Emissions	**2.19**	**3.32**	**0.45**	**0.29**	**0.62**	**0.01**	
Construction Emissions	**30.10**	**48.08**	**4.47**	**3.06**	**5.46**	**0.07**	
Total Operation and Construction Overlap Emissions	**32.29**	**51.40**	**4.92**	**3.35**	**6.08**	**0.07**	

Note:

1. The worst day during the construction and operation overlap phase has 4 MDT, 4 LDT and 2 aerial lifts used in 2 facilities overlapping.
2. The maximum emissions occur when 3 baghouses and 1 building are under construction in the operation and construction overlap phase

APPENDIX C

LIST OF AFFECTED FACILITIES

Facility Name	SIC	Facility ID	On Lists Per Government Code §65962.5 Per EnviroStor?	Address	City	Zip	Located Within Two Miles of Airport?	Nearest Sensitive Receptor	Approx. Distance to Nearest Sensitive Receptor (ft)	Nearest School	Approx. Distance to Nearest School (ft)
Aerocraft Heat Treating	3398	2372	No	15701 Minnesota Ave	Paramount	90723	No	Residential	70	West Gaines Elementary	1,800
Ajax Forge	3321	19515	No	1956-60 E 48TH ST	LOS ANGELES	90058	No	Residential	1,297	Vernon City School	1,437
Aluminum Precision Products	3365	36522	No	2621 S Susan St	Santa Ana	92704	No	Residential	1,200	Kenneth E- Mitchell School	2,000
American Hand Forge	N/A	171062	No	165 S SPRUCE AVE	RIALTO	92376	No	school	307	Rialto Community Day School	307
California Amforge Corp	3462	19051	No	750 N VERNON AVE	AZUSA	91702	No	Residential	450	Longfellow Elementary	1,750
California Drop Forge	3462	138568	Yes	1033 Alhambra Ave	LOS ANGELES	90012	No	Residential	~~660~~ 475	Ann Street Elementary	1,100
Carlton Forge Works	3462	22911	No	7743 E ADAMS ST	PARAMOUNT	90723	No	Residential	50	Lincoln Elementary	1,000
Chen Tech Industries	9999	110278	No	10 Autry	IRVINE	92618	No	school	2,500	Serrano Intermediate School	4,530
Continental Forge	3463	20600	No	512 CARLIN ST	COMPTON	90222	Yes[1]	Residential	400	~~Lindberg Elementary School~~ Sunshine Daycare Pre-School Center	~~1,400~~ 900
Firth Rixson	3312	144293	No	10685 Beech Ave	FONTANA	92337	No	Residential	360	Jurupa High Schoold	4,720
~~Foot Axle & Forge Co.~~	~~3714~~	~~4713~~	~~Yes~~	~~3954 WHITESIDE ST~~	~~LOS ANGELES~~	~~90063~~	~~No~~	~~Residential~~	~~370~~	~~Robert F Kenedy Elementary~~	~~1,650~~
Independent Forge	3599	1941	Yes	692 N Batavia	Orange	92868	No	Residential	910	Sycamore Elementary	2,330
Mattco Forge Inc.	N/A	181199	No	16443 Minnesota Ave	PARAMOUNT	90723	No	school	380	Wesley Gaines Elementary	380
MS Aerospace	3452	140513	No	13928 Balboa Blvd.	Sylmar	91342	No	Residential	240	Van Gogh Elementary School	7,392
Pacific Forge	3542	2946	No	10641 ETIWANDA AVE	FONTANA	92337	No	Residential	6,177	Henry J. Kaiser High School	9,134
Performance Forge	N/A	128708	No	7401 Telegraph Raod	Montebello	90640	No	Residential	850	Greenwood Elementary	6,178
Press Forge	3462	136	No	7700 JACKSON ST	PARAMOUNT	90723	No	Residential	165	Wesley Gaines Elemenatry	1,000
Quality Aluminum Forge	3542	144835	Yes	820 N CYPRESS ST	ORANGE	92867	No	Residential	100	Richland Continuation High	680
Schlosser Forge	3463	15504	No	11711 ARROW ROUTE	Rancho Cucamonga	91730	No	Residential	3,000	Upland Christian Academy	4,630
Shultz Steel	3462	16639	Yes	5321 FIRESTONE BLVD	SOUTH GATE	90280	No	Residential	790	Park Ave. Elementary School	1,960
Sierra Alloys	3325	181223	No	5467 Ayon Ave	Irwindale	91706	No	Residential	1,178	Valleydale Elementary School	3,760
Valley Forge Acquisition	3462	74086	No	444 MOTOR AVE	AZUSA	91702	No	Residential	1,900	Valleydale Elementary School	5,544
Weber Metals	3463	10966	No	16706 GARFIELD AVE	PARAMOUNT	90723	No	Residential	330	Wesley Gaines Elementary	422

Notes:

1. The facility is about 1.94 miles to Compton Airport.

APPENDIX D

REFERENCES

References

Organizations and Persons Consulted

REFERENCES

California Environmental Quality Act (CEQA) Guidelines, codified at Title 14 California Code of Regulations, §15000 et seq.

Compton Airport Master Plan Report, County of Los Angeles, Compton, California, August 1991.

Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO2 Domes," Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html.

Lewis-Presley Air Quality Management Act, The, 1976 Cal. Stats., ch 324 (codified at Health and Safety Code, §§40400-40540).

SCAQMD, 2000. SCAQMD Air Toxics Control Plan, http://www.aqmd.gov/home/library/clean-air-plans/clean-communities-plan/air-toxics-control-plan

SCAQMD, 2003. 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.

SCAQMD, 2008. CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Governing Board Letter, December 5, 2008. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-%28ghg%29-ceqa-significance-thresholds/ghgboardsynopsis.pdf.

SCAQMD, 2010. SCAQMD 2010 Clean Communities Plan. November 5, 2010.

SCAQMD, 2016. Draft Final 2016 Air Quality Management Plan. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draft-final-aqmp/clean/2016finaldraftaqmpdec2016(clean).pdf.

ORGANIZATIONS AND PERSONS CONSULTED

The CEQA statutes and Guidelines require that organizations and persons consulted be provided in the EA. A number of organizations, state and local agencies, and private industry have been consulted. The following organizations and persons have provided input into this document:

Re: Estimated baghouse sizing determination and cost
Greg Schlentz
Dust Collector Services
714.237.1690
gred@dustcollectorservices.co

Re: Estimated baghouse sizing determination and cost
EPA Air Pollution Control Cost Manual, Sixth Edition, January 2002
https://www3.epa.gov/ttncatc1/dir1/c_allchs.pdf

Re: Estimated baghouse Sizing Determination
Busch International Fugitive Emission Filtration Units
Bulletin No. FEF-802, PAR 1420.1, P. C-141, December 2013

Re: Construction Schedule
City of Azusa
Betty Gallardo
Development Services Assistant
Building Division
P: 626.812.5249
E: bgallardo@cit.azusa.ca.us
Phone Conversation on 12/14/2016
Building permit review requires 10-12 working days

Re: Construction Schedule
City of Paramount
John Carver
Assistant Community Development Director
P: 562.220.2048
E: jcarver@paramountcity.com
Personal Communication on 12/12/2016
Building permit review requires 10 working days

Re: Construction Schedule
City of Irwindale
Kyle Ingram
Building Permit Technician
P: 525.812.5249
E: kdingram@dpw.lacounty.gov
Phone conversation on 12/14/2016
Building permit review requires 10-20 working days

APPENDIX E

Comment Letters Received on the Draft EA and Responses to Comments

Comment Letter #1: Robert Komrij / Atlas Carpet Mills

Comment Letter #2: Dr. Shasta C. Gaughen Ph.D. / Pala Environmental

Comment Letter #3: Diana Watson / Department of Transportation

Sam Wang

From: Robert Komrij <rkomrij@atlascarpetmills.com>
Sent: Thursday, January 12, 2017 7:15 AM
To: Sam Wang
Subject: RULE 1430

Greetings Mr. Swang

With the proposed
Metal Grinding Operations requirements be applicable at manufacturing facilities?
Occasionally we weld, cut and grind metal in our maintenance departments.
Will these proposed restrictions apply to these type of operations?
Or do the proposed restrictions apply to ONLY Metal Forging Facilities.

Thanks
Robert Komrij / Atlas Carpet Mills / (323)724-9000 X2264

This message is intended solely for the use of the addressee(s) and is intended to be privileged and confidential. If you have received this message in error, please immediately notify the sender and delete all copies of this email message along with all attachments. Thank you.

PALA ENVIRONMENTAL DEPARTMENT
PALA BAND OF MISSION INDIANS
PMB 50, 35008 Pala Temecula Road | Pala, CA 92059
Phone 760-891-3510 | Fax 760-742-3189

January 12, 2017

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178
Attention: Sam Wang

Re: Notice of Completion of a Draft Environmental Assessment – Proposed Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities

Dear Mr. Wang,

Thank you for the notice referenced above. This letter constitutes our response on behalf of Robert Smith, Chairman of the Pala Band of Mission Indians.

At this time, the Pala Band has no objection to the action outlined in the notice as proposed. We reserve the right to comment in the future should there be modifications or if new information becomes available.

If you have any questions or comments, please contact Darold Wallick, Air Technician for the Pala Environmental Department, at dwallick@palatribe.com or 760-891-3540.

Sincerely,

Shasta C. Gaughen, PhD
Environmental Director

DEPARTMENT OF TRANSPORTATION
DISTRICT 7-OFFICE OF TRANSPORTATION PLANNING
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 897-9446
FAX (213) 897-1337
www.dot.ca.gov

Comment Letter #3

Serious Drought.
Serious drought.
Help save water!

February 9, 2017

Barbara Radlein
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Proposed Rule 1430-Control of Emissions From Metal Grinding Operations at Metal Forging Facilities
SCH # 2017011019
GTS# 07-ALL-2017-00014

Dear Ms. Radlein:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Draft Environmental Assessment (DEA) of Proposed Rule 1430. The project involves South Coast Air Quality Management District's (SCAQMD) staff proposing new Rule 1430 to reduce toxic emissions, particulate matter emissions, and odors from metal grinding and metal cutting operations at metal forging facilities located in industrial, commercial, or mixed land use areas throughout the entire SCAQMD jurisdiction. Proposed rule 1430 does not apply to grinding or cutting operations that are conducted under a continuous flood of metal removal fluid. PR 1430 does not apply to grinding or cutting operations that are conducted under a continuous flood of metal removal fluid.

Please note that any work performed within State right of way will require an encroachment permit from Caltrans. In addition, please be reminded that transportation of heavy construction equipment materials, or other special equipment, which require the use of oversized-transport vehicles on State highways will require a Caltrans transportation permit. Caltrans recommends that large size truck trips be limited to off-peak commute hours.

If you have any questions please feel free to contact Melanie Bradford, the project coordinator at (213) 897-9446 and refer to GTS#07-ALL-2017-00014.

Sincerely,

DIANNA WATSON
LD-IGR Branch Chief

cc: Scott Morgan, State Clearinghouse

Responses to Comments

Response to Comment Letter #1: Proposed Rule 1430 only applies to metal grinding and metal cutting operations at metal forging facilities. The provisions of this rule do not extend to metal grinding and metal cutting operations at non-forging facilities.

Response to Comment Letter #2: Thank you for the comments. No responses are required.

Responses to Comment Letter #3: The comment is noted that any work performed within the State right of way will need an encroachment permit from the California Department of Transportation. However, the construction activities that may occur as a result of implementing the proposed project are expected to occur on private property at the affected facility sites and would not be expected to occur within the State right of way.

The comment is also noted that the transportation of construction equipment and materials on oversized-transport vehicles on State highways will require a Caltrans transportation permit. However, the nature of the construction activities that may occur as a result of implementing the proposed project is on a relatively small scale due to the compact size of the anticipated construction sites at the existing affected facilities. For this reason, the analysis anticipated that medium-duty trucks would be sufficient for supplying construction equipment and materials to the affected sites as well as hauling away waste and other materials as needed. Thus, medium-duty trucks would not be expected to qualify as oversized-transport vehicles that would require a Caltrans transportation permit or would need to operate only during off-peak hours.

Attachment J

Proposed Rule 1430

Control of Emissions from Metal Grinding Operations at Metal Forging Facilities







South Coast AQMD

Public Hearing
March 3, 2017

Background

- Metal grinding is an integral part of metal forging and is currently unregulated
- Community complaints of metallic odors combined with air sampling led to the metal grinding operation at Carlton Forge Works, a metal forging facility
- Offsite monitoring near Carlton Forge Works showed:
  - Elevated levels of nickel and hexavalent chromium
  - Nickel correlated to metal grinding operation
  - Ongoing investigation into sources of hexavalent chromium in Paramount

Carlton Forge Works

- Previous pollution controls were not sufficient
  - Point source controls not operated properly
  - Fugitive emissions released through bay doors and large vents of grind building
- Carlton Forge Works implemented voluntary measures between 2013 to 2015
  - Upgraded point source controls
  - Improved total enclosure
  - Enhanced housekeeping





Prior to Upgrades

Average off-site nickel levels were 90 ng/m^3 and reaching about 300 ng/m^3

After Upgrades

Average off-site nickel levels are about 16 ng/m^3

Need for Proposed Rule 1430

- 22 metal forging facilities that conduct grinding or cutting
- Similar to findings at Carlton Forge Works, point source controls and fugitive emission issues exist at other forging facilities
- Similar and possibly higher PM and toxic metal levels expected from other forging facilities as compared to Carlton Forge Works
- All alloys contain some toxic metals









Grinding 10 billets a day generates about 100 pounds per day of metal particulate...



=

500 pounds of metal PM in one week

Source: Valley Forge comment letter. Based on weight before and after grinding.



Metal grinding at forging facilities is an intense process where pollution controls are needed

8 metal forging facilities conduct grinding with no pollution controls



*** 2 facilities conduct grinding outside of a building enclosure**

14 facilities have pollution controls; only 2 facilities are permitted...

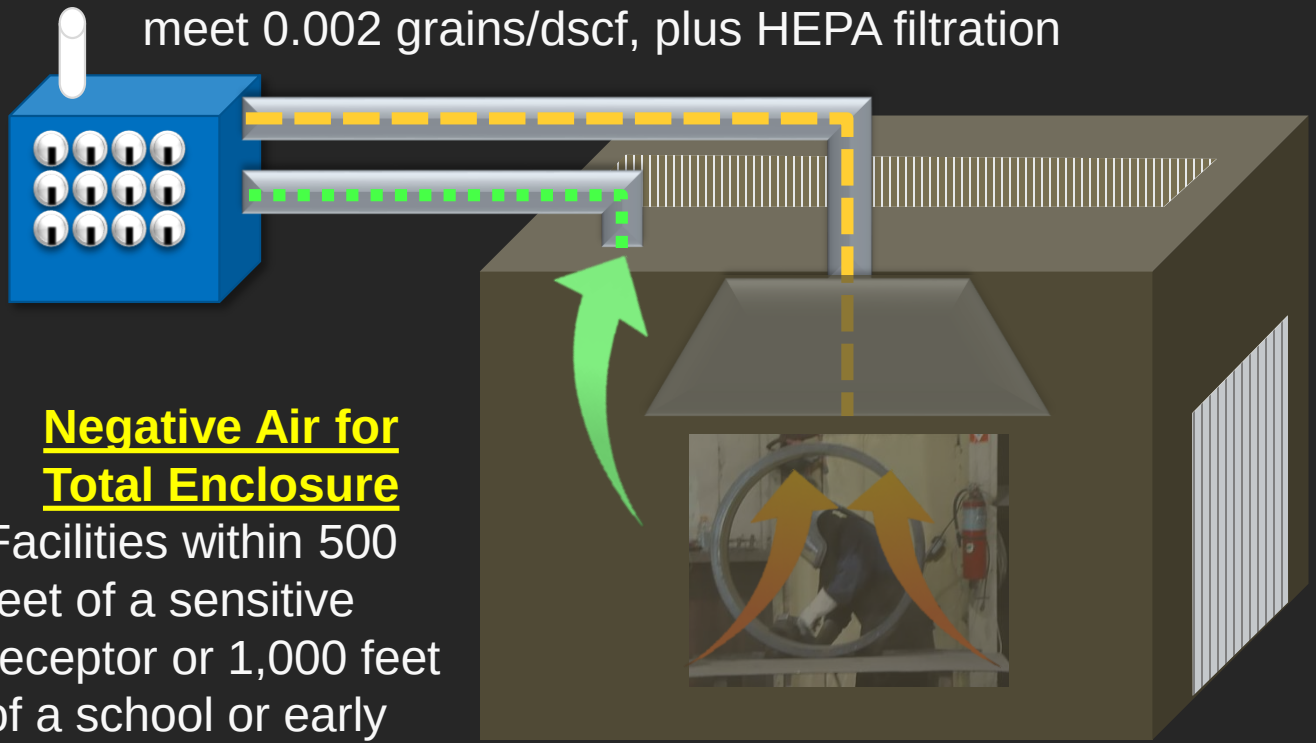
Lack of proper design, operation, and maintenance of pollution controls can lead to release of metal particulate



Rule Approach

Point Source Controls

Pollution controls for metal grinding stations must meet 0.002 grains/dscf, plus HEPA filtration



Total Enclosure

Total enclosure closing openings to further contain fugitive metal particulate

Negative Air for Total Enclosure

Facilities within 500 feet of a sensitive receptor or 1,000 feet of a school or early education center

Housekeeping Measures

Clean any remaining fugitive metal particulate

Key Compliance Dates

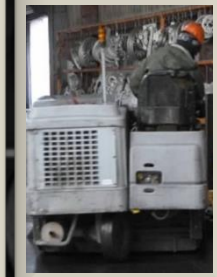
Day 1

- No Grinding or Cutting in Open Air
- Grinding in temporary enclosure or building



30 Days

Begin House-keeping Provisions



60 Days

Submit Permit Application

South Coast AQMD

180 Days

Upgrade Existing Buildings Close-Off Openings



1 Year or 6 Months After Permit Approval

- Complete New Total Enclosures
- Complete Total Enclosures w/Negative Air, if Required
- Install Pollution Control Equipment



Periodic Testing

- PM source test annually
- Multi-metals source test every 4 years
- Hexavalent chromium source test every 4 years, unless baghouse catch <1% total chromium
- Periodic smoke test



Continuous Monitoring

- Bag leak detection system
- Measure pressure across HEPA filter
  - Must use continuous data logger
- Additional source test if pressure across HEPA is outside of proper operating range
  - 3 times in 60 days; or
  - 1 time over a 24-hour period

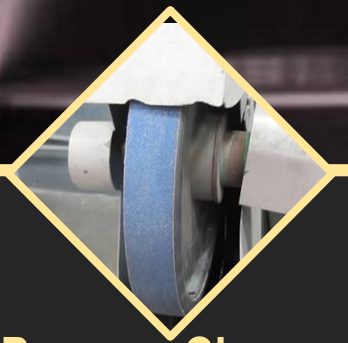
Odor Contingency Measures

If facility receives 4 confirmed odor complaints* in a 6-month period, must select and implement measure to reduce odors



Operational Change

- Changing ingress and egress openings
- Moving grinding stations



Process Change

- Change grinding element
- Change materials applied to grinding piece



Enhancement to Total Enclosure

- Installation of booths or barriers for grinding stations
- Upgrade openings used for ingress or egress



Other Odor Reducing Measure

- Any other measure or modification that can help to reduce odors or minimize odors

* Complaints for the same event must from different households and odors must be related to metal grinding and cutting operations

Other Requirements

- Signage to report air quality issues
- Provisions when conducting maintenance of emission control devices
- Recordkeeping requirements – filter replacement, call logs for air quality issues, total chromium from each baghouse catch*
- Exclusions for small parts, grinders less than 1-inch in diameter, and maintenance grinding

TO REPORT AIR QUALITY ISSUES SUCH AS ODORS, DUST, OR SMOKE FROM THIS FACILITY, CALL EITHER THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG, OR [*FACILITY CONTACT PHONE NUMBER*]





* If seeking exclusion from hexavalent chromium source testing



Key Issue - Cost of Controls

- Key Issue:
  - One facility commented that total enclosure and point source controls (baghouse and HEPA) is a financial burden
- Staff Response:
  - Facility currently conducts metal grinding outdoors, without controls – higher costs are expected
  - Estimated capital cost is $340,000 (enclosure + pollution controls)
  - Use of existing enclosure can reduce capital cost to about $180,000



Staff Recommendation

Adopt the Resolution:

- **Certify the Final Environmental Assessment**
- **Adopt Proposed Rule 1430**

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 37

PROPOSAL: Approve and Adopt Technology Advancement Office Clean Fuels Program 2016 Annual Report and 2017 Plan Update and Resolution, and Receive and File and Approve and Adopt Revised Membership of Technology Advancement and Clean Fuels Advisory Groups

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 2017 Clean Fuels Program Draft Plan Update was presented to the Technology Committee for review and comment at its October 21, 2016 meeting. This action is to approve and adopt the final Technology Advancement Clean Fuels Program Annual Report for 2016 and 2017 Plan Update as well as the Resolution finding that proposed projects do not duplicate any past or present programs. This action is to also receive and file membership changes to the Technology Advancement Advisory Group and approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group.

COMMITTEE: Technology, February 17, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Adopt the attached Technology Advancement Office Clean Fuels Program Plan Update for 2017 and include it in the SCAQMD's Clean Fuels Program
2. Approve the attached Technology Advancement Office Annual Report for 2016;
3. Approve the attached Resolution finding that the Technology Advancement Office Clean Fuels Program Plan Update for 2017 and its proposed projects do not duplicate any past or present programs of specified organizations;
4. Receive and file membership changes to the Technology Advancement Advisory Group and adopt membership changes to the SB 98 Clean Fuels Advisory Group; and

5. Approve and adopt membership changes to the SB 98 Clean Fuels Advisory Group.

Wayne Nastri
Executive Officer

MMM:FM:NB:LCM:DAH

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 Draft 2016 Air Quality Management Plan (AQMP) measures rely on a mix of currently available technologies as well as the expedited development and commercialization of lower-emitting mobile and stationary advanced technologies in the Basin to achieve these standards. The 2016 AQMP projects that a 45 percent reduction in NOx is required by 2023 and an additional 55 percent reduction by 2031, the majority of which must come from mobile sources (both on- and off-road), requiring widespread deployment of current clean air technologies as well as further commercialization of advanced technologies. The Technology Advancement Office (TAO) Clean Fuels Program, more than ever before, is an integral part of this effort, and it must foster and accelerate advancement of transformative transportation and off-road technologies, with an emphasis on commercialization of zero and near-zero emission vehicle and fuel technologies, especially given the region's thriving goods movement industry.

The Clean Fuels Program, first initiated in 1988 along with establishment of 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 $4 of outside funding to every dollar of Clean Fuels funding. While TAO aggressively seeks to leverage funds to accomplish more with every dollar, it also strives to act as a leader in technology development and commercialization in an effort to accelerate the reduction of criteria pollutants.

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 as well as a 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 review by an advisory group and approval by the Board, prior to submittal to specified offices of the California Legislature 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, subject to full Board approval as required by the charter. 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, and in fact membership changes to the TAAG were approved by the Technology Committee last year in conjunction with approval of the prior report.

Proposal

This package includes an adoption resolution (Attachment A) and one combined document comprising the TAO Clean Fuels Program 2016 Annual Report and 2017 Plan Update (Attachment B). 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 provide feedback to staff on the documents during in-person biannual meetings and through subsequent correspondence. The advisors are all experts in different fields and are members of national laboratories, state or federal agencies and/or academia. Staff diligently monitors specific technologies through efforts at state and federal collaboratives, partnerships and industrial coalitions. Finally, staff also invites other 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.

Clean Fuels Program Annual Report 2016

The Annual Report covers projects and progress of the Program for Calendar Year (CY) 2016. 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/or maintenance of ambient air quality standards and a description of the efforts made to overcome commercialization barriers;

- An analysis of the impact of the TAO's Clean Fuels Program on the private sector and on research, development and commercialization efforts by major automobile and energy firms, as determined by SCAQMD staff;
- A description of projects funded by the SCAQMD, including a list of recipients, subcontractors, cofunders, 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 2016, the Clean Fuels Program executed 60 new projects or studies and modified 6 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 $21.8 million, with total project costs of slightly more than $198 million that includes funding from other governmental agencies, private sector, academia and research institutions. The $21.8 million includes $3.4 million recognized into the Clean Fuels Fund as pass-through funds from project partners. 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 2016. 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.

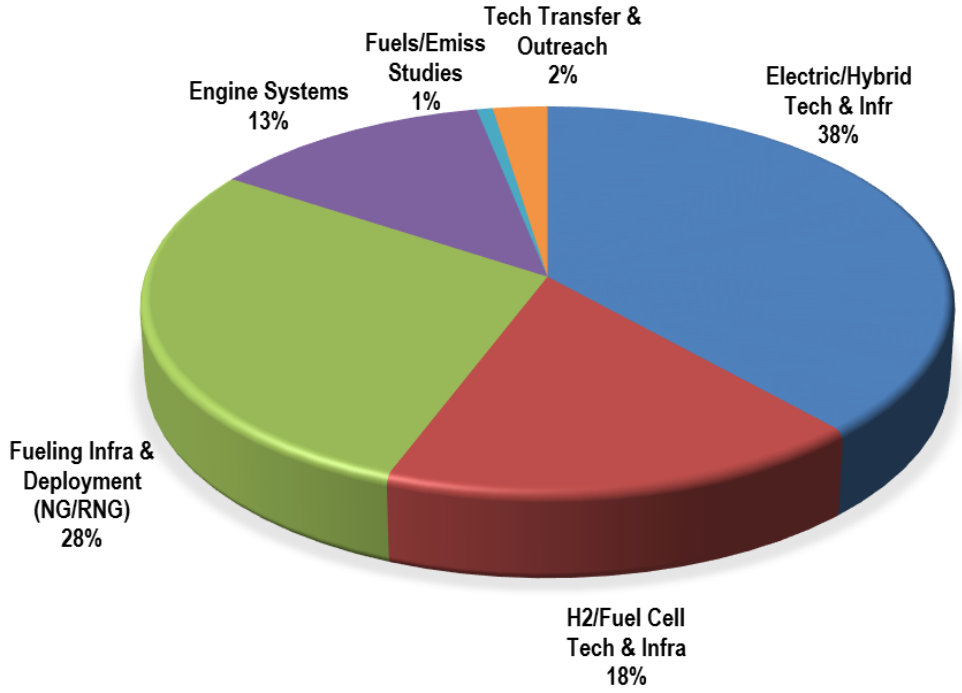


Figure 1: Distribution of Clean Fuels Program Funds in CY 2016 ($21.8 Million)

During CY 2016, 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 2016 included significant hydrogen/fuel cell projects to develop and demonstrate both medium- and heavy-duty vehicles in the goods movement industry; continued development and demonstration of electric and hybrid technologies and infrastructure with an emphasis on zero emission goods movement technologies, most notably CARB's $23 million California Climate Initiative award for zero emission drayage trucks; development and demonstration of heavy-duty natural gas engines and vehicles including larger-scale natural gas engines; and natural gas and renewable natural gas production projects as part of broader-scale fueling infrastructure and deployment efforts. The significant project scopes of a few of the key contracts executed in 2016 resulted in leveraging $9 for every $1 of Clean Fuels funding, whereas typical leveraging is $3-$4 for every $1 in Clean Fuels funding.

In addition to the new projects, 32 research, development and demonstration projects or studies and 11 technology assessment and transfer projects were completed in CY 2016. Summaries for each of the technical projects are provided in Appendix C of the Annual Report.

The Clean Fuels Program in CY 2016 continued to leverage other outside opportunities, with the SCAQMD securing new awards totaling $48.9 million from federal, state and local 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 aggressively pursue applicable funding opportunities that may focus on greenhouse gas emissions reductions, energy efficiency and reduction in petroleum usage, while remaining committed to acting as a leader in developing advanced technologies that lower criteria pollutants. Leveraging dollars and applying for funds is more important than ever given the magnitude of required funding identified in the 2016 AQMP to achieve federal ozone air quality standards.

Clean Fuels Program Plan Update 2017

Every year, TAO staff re-evaluates the Clean Fuels Program to develop a Plan Update which essentially serves to re-calibrate the technical direction of the Program. The attached Plan Update for the Clean Fuels Program identifies potential projects to be considered for funding during 2017 and beyond. The proposed projects reflect promising low-, 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 2017 include but are not limited to: 1) development and demonstration of large-scale hydrogen refueling facilities; 2) development and demonstration of ultra-low emission diesel larger displacement engines; 3) development and demonstration of zero emission heavy-duty vehicles; 4) development, demonstration and deployment of advanced natural gas engines and zero emission technologies for high horsepower applications; and 5) development and demonstration of alternative fuel production and infrastructure, especially with renewable fuels. Projects not funded in 2017 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 (especially large-scale refueling facilities)
- Electric and Hybrid Vehicle Technologies and Related Infrastructure (emphasizing electric and hybrid electric trucks and container transport technologies with zero-emission operation)
- Engine Systems (emphasizing heavy-duty alternative and renewable fuel engines for truck and rail applications)
- Fueling Infrastructure and Deployment (predominantly natural gas and renewable fuels)

- Fuels and Emission Studies
- Stationary Clean Fuels Technologies (including renewables)
- Technology Assessment and Transfer and Outreach
- Emission Control Technologies
- Health Impacts Studies

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 recent studies; or (4) further accelerate technology development, commercialization or market acceptance of promising technologies.

These technical priorities will necessarily be balanced by funding availability and the availability of qualified projects. Revenues from several sources support 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 CARB, CEC, NREL and the U.S. Departments of Energy and Transportation, also support technology advancement efforts.

The Plan Update is the result of a comprehensive planning and review process. This process included consideration of the 2012 and 2016 AQMP control measures as well as CARB's Mobile Source Strategies and the Sustainable Freight Action Plan. It also incorporates coordination activities involving outside organizations including consideration of federal, state and local activities and proposed integrated solutions that capture the co-benefits of reduced GHG emissions and criteria pollutants. As part of this process, staff hosted two meetings in September 2016 and January 2017 to solicit input from the CFAG, TAAG and other technical experts. During these meetings, the participants reviewed the current Technology Advancement projects and discussed near-term and long-term technologies as potential projects. A Medium- and Heavy-Duty Innovators Roundtable to discuss existing and near commercial technologies and potential implementation pathways was convened in May 2016, as well as a zero and near-zero emissions heavy-duty truck site visit and discussion with EPA, CARB and the Ports in October 2016. Additionally, staff attended meetings or workshops with CARB, CEC, the California Fuel Cell Partnership, the California Plug-in Electric Vehicle Collaborative, California Hydrogen Business Council, 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.

Staff presented the Draft 2017 Clean Fuels Program Plan Update to the Technology Committee on October 21, 2016, and the changes in funding priority requested by the Technology Committee are reflected in the revised Plan Update. These changes were to increase funding in the engine systems category while decreasing the amount in the electric and hybrid technologies and infrastructure category due to the recent CARB drayage truck award. Figure 2 graphically depicts the potential distribution of Clean Fuels Program funds, based on projected program costs of $16.5 million, for the nine project areas discussed above.

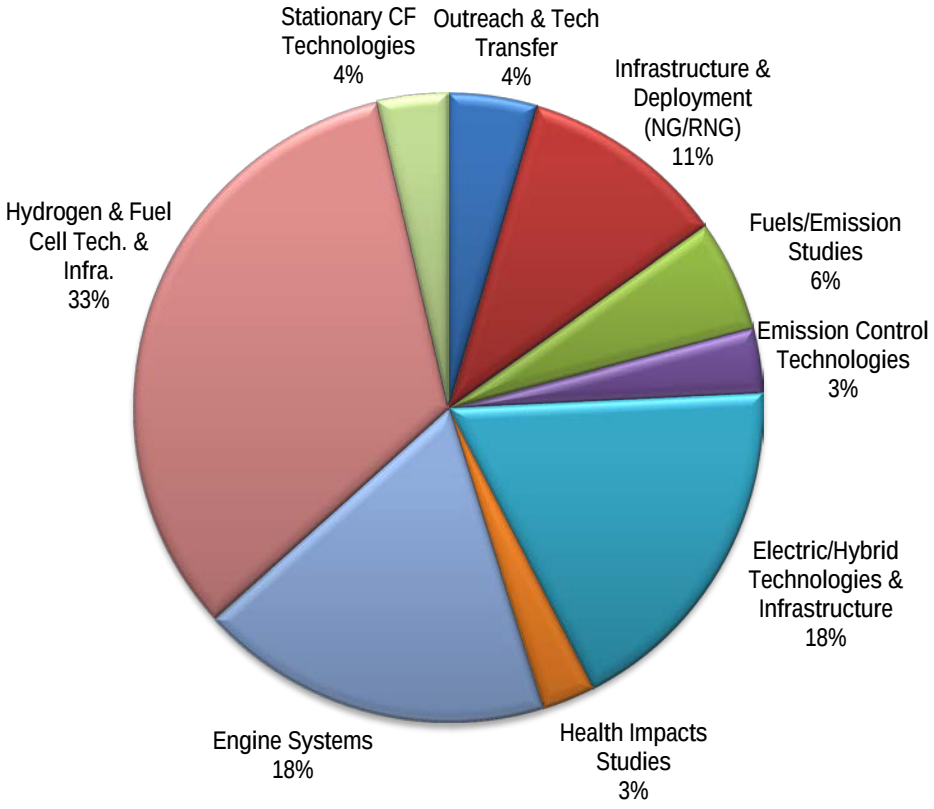


Figure 2: Projected Cost Distribution for Potential Projects in 2017 ($16.5 million)

The expected actual program expenditures for 2017 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 Clean Fuels funding. Specific contract awards throughout 2017 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 2016 and adopt the Clean Fuels Plan Update for 2017 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 by the SB 98 Clean Fuels Advisory Group.

Attachments

A. Resolution
B. Qualifications and Expertise of Proposed New Advisory Group Members
C. TAO Clean Fuels Program 2016 Annual Report and 2017 Plan Update
D. Board Meeting Presentation

ATTACHMENT A

RESOLUTION NO. 17-____

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 2016 and adopting the Clean Fuels Program Plan Update for 2017.

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 (Alarcon), 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; and

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 consider approving 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 2016.

BE IT FURTHER RESOLVED, that the Board adopts the Technology Advancement Office Clean Fuels Program Plan Update for 2017.

BE IT FURTHER RESOLVED, that the Board hereby directs staff to forward the Technology Advancement Office Clean Fuels Program Annual Report 2016 and Plan Update 2017 to the California Legislature and the Legislative Analyst.

_____ _____

Dated: Denise Garzaro, Clerk of the Boards

ATTACHMENT B
Qualifications and Expertise of Proposed New Advisory Group Members

SB 98 Clean Fuels Advisory Group*

John Faust, PhD., Cal-EPA	Dr. John Faust, Branch Chief of the Air, Community and Environmental Research Branch, at the Office of Environmental Health Hazard Assessment, Cal/EPA, located in Oakland, California, has since 2004, managed Cal/EPA's efforts, under its Environmental Justice Action Plan, to introduce consideration of the cumulative impact of environmental pollutants into decision-making. This work has included evaluating scientific data on health and exposure disparities and population vulnerability, particularly in low-income or minority populations. Dr. Faust has provided technical expertise to the office in the areas of toxicology, carcinogenic mode of action, dose-response assessment, and risk assessment. Other work has involved identification of new carcinogenic hazards, establishing cancer potencies and standards for contaminants in drinking water. He is a graduate of Virginia Tech (B.S., Biochemistry, 1985) and Duke University (Ph.D. Pharmacology/Toxicology, 1990)

**The charter of the CFAG requires membership changes to be approved by the full SCAQMD Board.*

Technology Advancement Advisory Group**

David Pettit NRDC	David Pettit, Senior Attorney at the Natural Resources Defense Council, is an experienced civil litigator in the state and federal trial and appellate courts. For 17 years, David was a shareholder in Caldwell, Leslie, Newcombe & Pettit, a Los Angeles law firm specializing in complex civil litigation. Prior to that, David was an associate at O'Melveny & Myers, a deputy city attorney for the City of Santa Monica, and a staff attorney with San Fernando Valley Neighborhood Legal Services. David also is active in the legal profession. He has served as a Judge Pro Tem in the Los Angeles Superior and Municipal Courts, and authored articles on land use, and environmental and civil rights for the Los Angeles Daily Journal, Los Angeles Lawyer magazine and the National Law Journal. He is also currently a member of the Santa Monica Sustainability Task Force. He is a graduate of UCLA Law School and the UCLA College of Letters and Science, where he majored in philosophy.
Dawn Wilson, SCE	Dawn Wilson, the Director of Environmental Affairs & Sustainability for Southern California Edison (SCE), is responsible for the development of an integrated environmental strategy in support of Company objectives. These responsibilities include Environmental Policy, Natural Resources & Public Lands, Transportation Electrification and the administration of the Corporate Responsibility Program. Prior to her current role Dawn served as the Director of Corporate Resources where she directed the strategy and operations of a $1 billion portfolio of SCE's non-electric facilities. Her responsibilities extended to back office functions such as mailing operations, drawing management and event management and the corporate travel program. She had management responsibility for a budget of approximately $300 million with approximately 300 employees. Over the years Dawn has held a variety of management positions including Director of Business and Organizational Support, Manager Transportation Services, and Manager of Environmental Health & Safety. Dawn began her career as a real estate transactional attorney and practiced with two private law firms before joining the law department of Southern California

	Edison where she practiced environmental law for 14 years. Dawn has served on various non-profit boards and currently serves on the board of the Los Angeles Conservation Corps and the Executive Board of the Pasadena Chapter of Jack & Jill of America. Dawn has a bachelor's degree in political science from Wellesley College and a law degree from the University of Michigan. She is a licensed attorney in the state of California.
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***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
DRAFT 2016 ANNUAL REPORT
AND 2017 PLAN UPDATE

South Coast Air Quality Management District
March 2017

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South Coast Air Quality Management District

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*Technology Committee Members

**Technology Committee Chairman

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This year's Annual Report and Plan Update
is dedicated in remembrance of

John J. Benoit

Supervisor, Fourth District, Riverside County

South Coast Air Quality Management District
Governing Board Member 2010-2016

Technology Committee Chairman 2012-2016

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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 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, which allows significant leveraging of the Clean Fuels funding (typically $3-$4 to every $1 of Clean Fuels funds), is its public-private partnership with private industry, technology developers, academic institutions, research institutions and government agencies. Further, while the TAO aggressively seeks to leverage funds to accomplish more with every dollar, it also strives to be a leader in technology development and commercialization to accelerate the reduction of criteria pollutants. As a result, the TAO 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. This approach provides the greatest flexibility and optimizes the region's ability to achieve National Ambient Air Quality Standards (NAAQS).

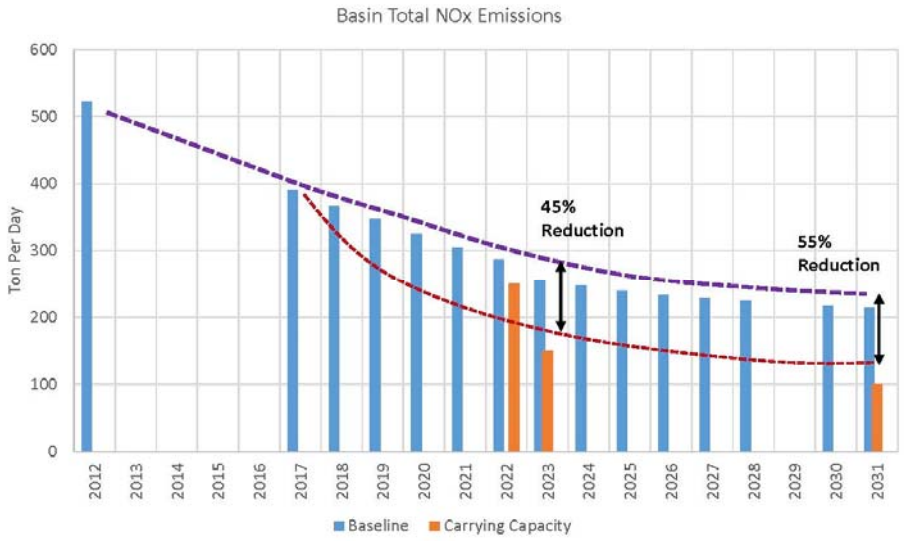
Health & Safety Code (H&SC) 40448.5.1 requires the SCAQMD to prepare, and submit to the Legislative Analyst each year, a Clean Fuels Annual Report and Plan Update. The Clean Fuels Annual Report looks at what the Program accomplished in the prior calendar year (CY) and the Clean Fuels Plan Update looks ahead at proposed expenditures for the next CY, essentially re-calibrating the technical emphasis of the Program. Preliminary review and comment by SCAQMD's Governing Board, advisory groups, technical experts and other interested parties are incorporated into the Final Plan Update, along with the Clean Fuels Annual Report, which are due to the Legislative Analyst by March 31 of every year.

The overall strategy of the TAO's Clean Fuels Program is based, in large part, on emission reduction technology needs identified through the Air Quality Management Plan (AQMP) process and the SCAQMD Governing Board's directives to protect the health of residents in Southern California, with its approximately 17 million people (nearly half the population of California). The AQMP is the long-term regional "blueprint" that defines:

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

The emission reductions and control measures in the Draft 2016 AQMP, which will be considered for adoption by the SCAQMD Governing Board on March 3, 2017, rely on a mix of currently available technologies as well as the expedited development and commercialization of lower-emitting mobile

and stationary advanced technologies in the Basin to achieve air quality standards. The Draft 2016 AQMP projects that an approximate 45 percent reduction in NOx is required by 2023 and an additional 55 percent reduction by 2031. The majority of these NOx reductions must come from mobile sources, both on- and off-road. Notably, 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). Ground level ozone (a key component of smog) is created by a chemical reaction between NOx and volatile organic compound (VOC) emissions. This is especially noteworthy because in the South Coast Air Basin the largest contributor to ozone is NOx emissions, and mobile sources contribute approximately 88 percent of the NOx emissions in this region. Furthermore, NOx emissions, along with VOC emissions, also lead to the formation of PM2.5 [particulate matter measuring 2.5 microns or less in size, expressed as micrograms per cubic meter ($\mu g/m^3$)]. The following illustrates the South Coast Air Basin's carrying capacity for NOx in tons per day and illustrates the sharp reductions needed for attainment.



The Draft 2016 AQMP includes integrated strategies and measures to demonstrate attainment of the following National Ambient Air Quality Standards:

Standard	Concentration	Classification	Latest Attainment Year
2008 8-hour Ozone	75 ppb	Extreme	2031
2012 Annual PM2.5	12 $\mu g/m^3$	Serious*	2025
2006 24-hour PM2.5	35 $\mu g/m^3$	Serious	2019
1997 8-hour Ozone	80 ppb	Extreme	2023
1979 1-hour Ozone	120 ppb	Extreme	2022

* The 2016 AQMP requests a reclassification from moderate to serious non-attainment for this standard

On a positive note, the Draft 2016 AQMP for the first time envisions Southern California achieving attainment through regulations and specifying further deployment of cleaner technologies formerly undefined as "blackbox" measures. This is due in part because of deployment of zero and near-zero technologies either commercialized or nearing commercialization, albeit with pathways that still require more specificity and scalability, and in part because of the emission reduction co-benefits from carbon dioxide (CO2) reductions expected from achievement of climate change goals as well as an adequate level of funds to incentivize the deployment of these cleaner technologies. There are significant challenges to getting there, however, including EPA and CARB moving forward with changing the heavy-duty engine exhaust NOx standard from 0.2 grams per break horsepower-hour (g/bhp-hr) to 0.02

g/bhp-hr, as well as identifying financial incentives to offset the higher cost of these emerging clean technologies.

In connection with that challenge, on June 3, 2016, the EPA received a Petition, led by SCAQMD and joined by many other state air quality management agencies, to initiate rulemaking guidelines to create a national standard for ultra-low NOx heavy-duty engines. The EPA has since acknowledged a need for additional NOx reductions through a harmonized and comprehensive national NOx reduction program for heavy duty on-highway engines and vehicles. The EPA has initiated action towards proposed rulemaking for a revised heavy-duty NOx program, with the intent of proposing standards that could begin model year 2024, consistent with the lead-time requirements of the Clean Air Act.

The Draft 2016 AQMP also takes an initial look at the emission reductions needed to meet the new federal 8-hour ozone air quality standard of 70 ppb and projects that an additional 25 tons per day (tpd) in NOx reductions between 2031 and 2037 will be needed for attainment in 2037, to be accomplished in part through greater implementation of incentivized zero emission technologies.

The daunting challenge to reduce NOx and PM2.5 to meet standards requires the Clean Fuels Program to encourage and accelerate advancement of advanced clean fuel and transportation technologies, leading the way to commercialization of progressively lower-emitting fuels and vehicles. Given the relationship between NOx, ozone and PM2.5, the 2017 Plan Update must emphasize emission reductions in all these areas. However, the confluence of federal, state and local planning efforts on climate change, greenhouse gases (GHGs), petroleum reduction, air quality and other environmental areas should provide co-benefits that may help the region.

Since development of the 2012 AQMP, given the region's thriving goods movement industry, it became clear that the effect of moving containers through the Ports of Los Angeles and Long Beach and the subsequent movement of goods throughout the region not only has a dramatic impact on air quality but also the quality of life in the communities along the major goods movement corridors. In recognition of these impacts, the SCAQMD has been leading 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, fuel cell and natural gas range-extended trucks, and catenary technology. The SCAQMD goods movement projects that have been initiated or anticipated incorporate a variety of fuels, including electricity, natural gas, biofuels, hydrogen and diesel. The prioritization of these types of projects is reflected in this Draft 2017 Plan Update.

The proposed funding allocations and prioritization are commensurate with the emissions inventory for the various categories that need significant NOx emission reductions. Staff has also included a simplified "Consumer Reports" type project ranking (Appendix D) for the core technologies discussed in the Annual Report and Plan.

2016 Annual Report

During CY 2016 the SCAQMD executed 60 new contracts, projects or studies and modified 6 continuing projects adding additional dollars toward research, development, demonstration and deployment (RDD&D) of alternative fuel and clean fuel technologies. Table 2 (page 38) lists these 66 projects or studies, which are further described in this report. The SCAQMD Clean Fuels Program contributed nearly $21.8 million in partnership with other governmental organizations, private industry, academia and research institutes, and interested parties, with total project costs of a bit more than $198 million. Table 3 (page 41) provides information on outside funding received into the Clean Fuels Fund ($3.42 million in 2016) as cost-share passed through the SCAQMD for the contracts executed in CY 2016. Table 4 (page 41) provides a comprehensive summary of federal, state and other revenue awarded to the SCAQMD during CY 2016 (approximately $48.9 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 significant project scopes of a few key contracts executed in 2016 resulted in leveraging $9 for every $1 of Clean Fuels funding, whereas typical leveraging is $3-$4 for every $1 in Clean Fuels funding. Leveraging dollars and aggressively applying for additional funds whenever funding opportunities arise is more important than ever given the magnitude of additional funding identified in the Draft 2016 AQMP to achieve federal ozone air quality standards.

The projects or studies executed in 2016 addressed a wide range of issues and opportunities with a diverse mix of advanced technologies. The following core areas of technology advancement for 2016 executed contracts (in order of funding percentage) include:

- Electric and Hybrid Vehicle Technologies and Related Infrastructure (emphasizing electric and hybrid electric trucks and container transport technologies with zero emission operations);
- Fueling Infrastructure and Deployment (predominantly natural gas and renewable fuels);
- Hydrogen and Mobile Fuel Cell Technologies and Infrastructure;
- Engine Systems (emphasizing alternative and renewable fuels for truck and rail applications);
- Technology Transfer/Assessment and Outreach; and
- Fuels and Emission Studies.

The pie chart on page 36 shows the distribution by percentage of executed agreements in 2016 across these core technologies.

During CY 2016, 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 2016 included but are not limited to continued development and demonstration of electric and hybrid technologies with an emphasis on zero emission goods movement technologies, large-scale production of renewable natural gas (RNG) as well as demonstration of next generation engines using RNG, development and demonstration of hydrogen technologies and infrastructure, and development and demonstration of heavy-duty natural gas and ultra-low emission diesel engines and vehicles.

As of January 1, 2017, there were 93 open contracts (Appendix B) in the Clean Fuels Program.

Thirty-two (32) RDD&D projects or studies and 11 technology assessment and transfer contracts were completed in 2016, as listed in Table 6 (page 63). Appendix C comprises two-page summaries of the technical projects completed in 2016. 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, 2017, after approval by the SCAQMD Governing Board.

2017 Plan Update

The overall strategy is based in large part on technology priorities and opportunities identified in the SCAQMD's AQMP and the SCAQMD Governing Board's directives to protect the health of residents in the Basin. The NOx, VOC and PM emission sources of greatest concern are heavy-duty on-road vehicles, medium- and light-duty on-road vehicles, and off-road equipment. Ocean-going vessels and locomotives remain a concern for the region, but at this time only the federal government has the authority to regulate them. Notwithstanding, TAO works with maritime and railroad companies to push the envelope in these areas as well.

Every year TAO staff re-evaluates the Clean Fuels Program to develop a Plan Update which essentially serves to re-assess the technology progress and direction for the agency. The Program continually seeks to support the development and 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 cofunding opportunities. As the state and federal governments have turned a great deal of their attention to climate change and petroleum reduction goals, 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 NOx reductions also garner reductions in greenhouse gas (GHG) and petroleum use. Due to these "co-benefits," the SCAQMD has been successful in partnering with the state and federal government, which allows the Clean Fuels Program to leverage its funding extensively.

To identify technology and project opportunities where 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 activities range from close involvement with state and federal collaboratives, partnerships and industrial coalitions, to the issuance of Program Opportunity Notices to solicit project ideas and concepts as well as issuance of Requests for Information (RFI) to determine the state of various technologies and the development and commercialization challenges faced by those technologies. For example, last year an RFI was released to solicit information from diesel engine manufacturers and other entities to identify ultra-low NOx emission technology strategies that will result in commercially viable diesel engine technologies capable of using renewable diesel for on-road heavy-duty vehicles that are capable of achieving emission levels 90% cleaner than the current 2010 emission standards for NOx and reduce particulate matter emissions to the greatest extent possible. Potential projects resulting from this RFI are included conceptually within the Draft 2017 Plan Update.

The Plan Update includes projects to develop, demonstrate and commercialize a variety of technologies, from near-term to long-term commercialization, that are intended to provide solutions to the emission control needs identified in the Draft 2016 AQMP. As noted, the Draft 2016 AQMP analysis indicates that an approximate 45 percent reduction in NOx is required by 2023 with an additional 55 percent NOx reduction by 2031. Given the need for these significant reductions over the next 6-14 year timeframe, mid- and longer-term alternative fuels, hybrid, electric and fuel cell based technologies are emphasized. Areas of focus include:

- reducing emissions from port-related activities, such as cargo handling equipment and container movement technologies, including demonstration and deployment of cargo container movement systems with zero emission range;
- mitigating criteria pollutant increases from renewable fuels, such as renewable natural gas, diesel and hydrogen as well as other renewable fuels and waste streams;
- developing and demonstrating electric-drive (fuel cell, battery, plug-in hybrid and hybrid) technologies across light-, medium- and heavy-duty platforms;
- producing transportation fuels and energy from renewable and waste stream sources; and
- establishing large-scale hydrogen refueling and EV charging infrastructure to help accelerate the introduction zero emission vehicles into the market.

Table 7 (page 79) lists the potential projects across the nine core technologies identified in this report. Potential projects for 2017 total $16.5 million, with anticipated leveraging of more than $4 for every $1 of Clean Fuels funding, for total project costs of nearly $70 million. The proposed projects may also be funded by revenue sources other than the Clean Fuels Program, especially VOC and incentive projects.

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CLEAN FUELS PROGRAM
Background & Overview

Program Background

The South Coast Air 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 region 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 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, cofunding 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 consulting with regarding approval of the required annual report prior for 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 Governing Board while changes to the Technology Advancement Advisory Group are reviewed by the SCAQMD Governing Board's Technology Committee. Current membership changes to both advisory groups, if required, will be considered by the SCAQMD Governing Board and its Technology Committee, respectively, as part of consideration of the 2016 Annual Report and 2017 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 Governing Board approval, duly noted.

The review process of the Clean Fuels Program now includes at minimum: 1) two full-day retreats of the two Advisory Groups, typically in the summer and winter; 2) review by other technical experts; 3) occasional technology forums or roundtables bringing together interested parties to discuss specific technology areas; 4) review by the Technology Committee of the SCAQMD Governing Board; 5) 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 6) finally submittal of the Clean Fuels Program 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. Figure 1 reflects the top NOx emission sources in 2023, emphasizing the need to target technology advancements in the goods movement industry as well as off-road equipment. The need for advanced technologies and clean fuels is best illustrated by Figure 2 below, which identifies NOx emissions by category and identifies just how far those emissions must be reduced to meet federal standards by 2023 and 2031.

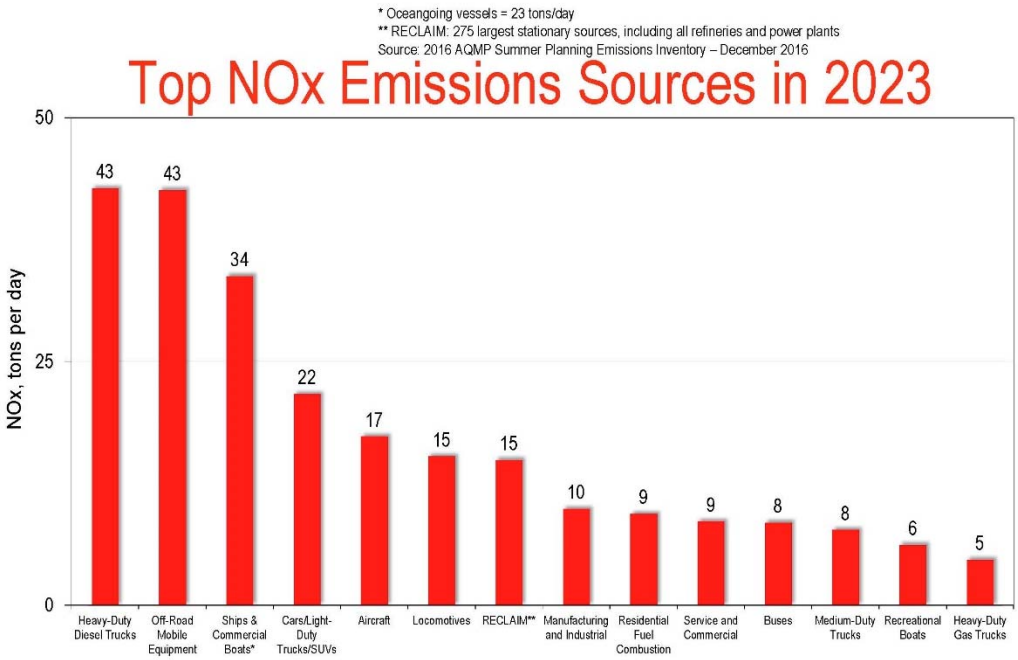


Figure 1: Top NOx Sources in 2023

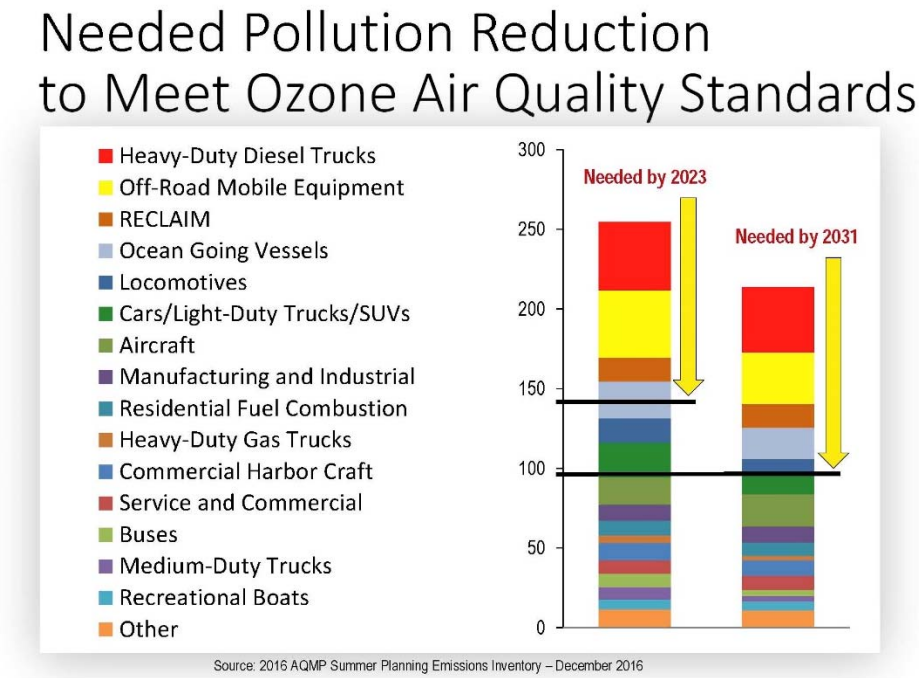


Figure 2: NOx Reductions Needed by 2023 & 2031

The above charts reflects NOx contributors by sector, sharply illustrating the impact of mobile sources on air quality and why the Draft 2016 AQMP calls for an approximate 45 percent reduction of NOx by 2023.

To fulfill long-term emission reduction targets, the Draft 2016 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 (80 ppb, 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 NOx and VOC. The Draft 2016 AQMP's estimate of needed NOx reductions will require the SCAQMD Clean Fuels Program to encourage and accelerate advancement of clean transportation technologies that are used as control strategies in the AQMP.

Health studies also indicate a greater need to reduce NOx emissions and toxic air contaminant emissions. For example, the goal of SCAQMD's Multiple Air Toxics Exposure Study (MATES) IV, initially launched in 2012, like the prior three MATES efforts, was to assess air toxic levels, update risk characterization, and determine gradients from selected sources. However, MATES IV added ultrafine PM and black carbon monitoring components as well. 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 increased the calculated risk estimates from these exposures by a factor of up to three.

In October 2015, the Governor signed SB 350 (De León) to codify goals outlined in his January 2015 inaugural address to help California meet climate targets for 2030 and beyond, including increasing the amount of electricity generated from renewable sources from 33 to 50 percent, a goal that will dramatically reshape California's energy economy over the next decade. Furthermore, in July 2016, in response to an Executive Order issued by Governor Brown the previous year, a draft California Sustainable Freight Action Plan was released[1], outlining a transition to a more efficient, economically competitive, and cleaner freight transport system. In November 2016, CARB also released a revised draft of the Short Lived Climate Pollutant strategy to address emissions from methane, black carbon and hydrofluorocarbons (HFCs).

The emission reductions needed for this region are outlined further in CARB's draft "Mobile Source Strategy" (May 2016)[2], which is an integrated plan to transform California's mobile sector. Specifically, it calls for California to build upon its successful efforts to meet critical air quality and climate goals, as summarized below:

- Attaining federal health-based air quality standards for ozone in 2023 and 2031 in the South Coast and San Joaquin Valley, and fine particulate matter (PM2.5) standards in the next decade;
- Achieving GHG emission reduction targets of 40 percent below 1990 levels by 2030;
- Reducing our petroleum use by up to 50 percent by 2030;
- Minimizing health risk from exposure to toxic air contaminants; and
- Increasing energy efficiency and deriving 50 percent of our electricity from renewable sources by 2030.

The document focuses on mobile sources, both on- and off-road equipment, that are responsible for approximately 80 percent of smog-forming NOx emissions, 95 percent of diesel particulate matter emissions and 50 percent of GHG emissions. Given this contribution, significant cuts in pollution from these sources are needed, therefore the proposed mobile source strategy calls for establishing requirements for cleaner technologies (both zero and near-zero) and deploying these technologies into the fleet, requiring cleaner and renewable fuels, and ensuring continued clean performance in use. Actions to accelerate the deployment of cleaner technologies through incentives, efficiency increases in moving people and freight, and support for the use of advanced transportation technologies

[1] http://www.dot.ca.gov/casustainablefreight/theplan.html

[2] https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf

such as intelligent transportation systems and autonomous vehicles, are also needed. Taken together, these actions would provide the reductions necessary from mobile sources to achieve the air quality and climate goals outlined above.

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 accelerated development and deployment of progressively lower-emitting technologies and fuels through innovative public-private partnership. Since its inception, SCAQMD's TAO has cofunded 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 2016 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 2016 the funds available through each of these mechanisms were as follows:

- Mobile sources (DMV revenues) $13,446,456
- Stationary sources (emission fee surcharge) $325,326

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 41) lists supplemental grants and revenues totaling $3.42 million for contracts executed in CY 2016. Table 4 (page 41) lists federal and state revenue totaling nearly $48.9 million awarded to the SCAQMD in 2016 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 2016, the Clean Fuels Program leveraged each $1 to more than $9 of outside funding. This atypical leverage was the result of a few key contracts with significant project scopes executed in 2016, such as the $23 million award from CARB's California Climate Investment

Program (see Table 2 for more information on these key projects). 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. While the SCAQMD aggressively seeks leverage funds to accomplish more with every dollar, it also strives to act as a leader in technology development and commercialization in an effort to accelerate the reduction of criteria pollutants. Leveraging dollars and aggressively applying for additional funds whenever funding opportunities arise is more important than ever given the magnitude of additional funding identified in the Draft 2016 AQMP to achieve federal ozone air quality standards. 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 2016 are listed in Table 1 (page 16).

2016 Overview

This report summarizes the progress of the SCAQMD Clean Fuels Program for CY 2016. The SCAQMD Clean Fuels Program cosponsors 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 CY 2016. During the period between January 1 and December 31, 2016, the SCAQMD executed 60 new contracts, projects or studies and modified 6 continuing projects adding additional dollars during CY 2016 that support clean fuels and advanced zero, near-zero and low-emission technologies. The SCAQMD Clean Fuels Program contribution for these projects was approximately $21.8 million, inclusive of $3.42 million received into the Clean Fuels Fund as cost-share for contracts executed in this reporting period, with total project costs of a bit more than $198 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, page 41), 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 ($48.9 million in 2016, see Table 4). More details on this financial summary can be found later in this report. The SCAQMD will continue to pursue federal, state and private funding opportunities in 2017 to amplify leverage, while acknowledging that support of a promising technology is not contingent on outside cost-sharing and affirming that SCAQMD will remain committed to acting as a leader in developing advanced technologies that lower criteria pollutants.

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:

- Hydrogen and Fuel Cell Technologies and Infrastructure (especially large-scale refueling facilities)
- Electric and Hybrid Vehicle Technologies and Infrastructure (emphasizing electric and hybrid electric trucks and container transport technologies with zero emission operation)
- Engine Systems (emphasizing heavy-duty alternative and renewable fuel engines for truck and rail applications)

- Fueling Infrastructure and Deployment (predominantly natural gas and renewable fuels)
- Health Impacts, Emissions and Fuel Studies
- Stationary Clean Fuels Technologies
- Emission Control Technologies
- Technology Assessment/Transfer and Outreach

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 cofunding opportunities. 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 in recent years turned a great deal of their attention to climate change, 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 NOx 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. Even with the leveraged funds, the challenge for the SCAQMD remains the need to identify project or technology opportunities in which its available funding can make a difference in achieving progressively cleaner air in the Basin.

To achieve this, the SCAQMD will need to continue to employ a number of outreach and networking activities as well as evaluate new ways to expand these activities. Typical activities range from intimate involvement with state and federal collaboratives, partnerships and industrial coalitions, to the issuance of Program Opportunity Notices to solicit project ideas and concepts as well as the issuance of Requests for Information to determine the state of various technologies and the challenges faced by those technologies for commercialization. While employing a number of creative outreach and networking activities to try to overcome these challenges, SCAQMD's TAO 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 develop a comprehensive plan (referred to as the 2017 Plan Update within this document) to essentially re-assess the technology progress and direction for the agency.

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 NOx technologies and clean energy alternatives such as fuel cells, solar power and other renewable and waste 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 80 percent of the current NOx emissions in this region. However, 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. The SCAQMD is exploring opportunities to expand its

authority in ways that would allow the agency to do more to foster technology development for ship and train activities as they relate to goods movement.

Specific projects are selected for cofunding 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 impacts or benefits, 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 Draft 2016 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 plug-in electric vehicles (PEVs) by almost all of the automakers and increased public attention on global warming, as well as several Executive Orders issued by Governor Brown over the last couple of years. At the federal level, there is also the continued push for PEVs through the EV Everywhere Program.

The growing awareness by both government and the public for the need for better air quality is leading to stricter emissions targets and a demand for greater fuel efficiency for 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 medium- and heavy-duty hybrid vehicle deployment, energy storage technologies and other power options, 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, biofuels and hydrogen) and propulsion systems - e.g., internal combustion engines (ICEs), batteries and fuel cells. In particular, utilizing electric drive technologies to enable zero emission mile capable heavy-duty trucks for goods movement remains a top priority. Electric and hybrid technologies are also being explored to address one of the SCAQMD's 2016-17 Goals and Priority Objectives, which is to continue development and demonstration of zero emission goods movement technologies.

EV adoption surpassed a huge milestone in 2016 selling a quarter of a million electric vehicles in California, according to the PEV Collaborative, and recent announcements by automakers (e.g., Chevrolet, Nissan, Tesla and BMW) on the extended range of upcoming EV models is especially promising. For example, the 2017 Chevy Bolt EV has an estimated EPA range of 238 miles with an affordable price target after incentives. However, in order to achieve the fleet penetration required for clean air, the need for charging infrastructure is significant. One sign of progress in this area is last year's California Public Utility Commission action recognizing the need for transportation electrification and approving Southern California Edison's (SCE's) $22 million "Charge Ready" pilot program to support installation of as many as 1,500 EV charging stations in their service territory. The SCAQMD will work with SCE to identify the best strategy for EV infrastructure (e.g., destination and residential charging) to complement this new program and continue to work with CEC, other government agencies and private entities to implement installation of charging infrastructure in our region.

Hydrogen and Mobile Fuel Cell Technologies and Infrastructure

Toyota and Hyundai commercialized light-duty fuel cell vehicles in 2015, Honda started delivering their Fuel Cell Clarity in 2016, and numerous others have plans to commercialize their own in the near future. As automakers continue to collaborate on development efforts (e.g., Honda and GM) and commercialize fuel cell vehicles, in the interim plug-in hybrid technology could help enable fuel cells

by using larger capacity batteries until fuel cell components mature. For example, Mercedes-Benz announced production of a plug-in fuel cell model GLC for 2018. However, the greatest challenge for the viability of fuel cell vehicles remains the installation and operations of hydrogen fueling stations. AB 8 requires the CEC to allocate $20 million annually from the Alternative and Renewable Fuel and Vehicle Technology Program until there are at least 100 publicly accessible hydrogen stations in operation in California. Of the 51 stations funded by CEC and CARB by the end of 2016, partially funded by SCAQMD for those in our region, there are five non-retail and 25 retail operational in California, but most if not all 51 are expected to be operational by the end of 2017 with capacity for more than 10,000 fuel cell vehicles. AB 8 also requires CARB to annually assess current and future FCVs and hydrogen stations in the marketplace. *The Joint Agency Staff Report on Assembly Bill 8: 2016 Assessment of Time and Cost Needed to Attain 100 Hydrogen Refueling Stations in California*[3] released in January 2017 reporting on 2016 findings states that there were 925 fuel cell vehicles registered in California by October 2016. However, CARB's annual survey of automakers projects 10,500 fuel cell vehicles in California by the end of 2018 and 34,300 by the end of 2021. Clearly, the SCAQMD must continue to support the infrastructure required to refuel retail fuel cell vehicles. To that end, SCAQMD is also actively engaged in finding alternatives to reducing the cost of hydrogen (e.g., large-scale hydrogen refueling stations) and potential longer term fuel cell power plant technology.

Engine Systems

Medium- and heavy-duty on-road vehicles contributed approximately 33 percent of the Basin's NOx based on Draft 2016 AQMP data. More importantly, on-road heavy-duty diesel trucks account for 33 percent of the on-road mobile source PM2.5, which has known toxic effects. These figures notably do not include the significant contribution from off-road mobile sources, which contribute significantly to NOx and PM2.5 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 NOx and particulate emissions. The current NOx 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 natural gas, renewable diesel and potentially other renewable or waste stream liquid fuels, 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. The SCAQMD's FY 2016-17 Goals and Priority Objectives also includes development and demonstration of next-generation natural gas engines/hybrid vehicles with the goal of developing engines 75-90 percent cleaner than the current emissions standard for NOx. Additionally, options for integrating with hybrid systems and alternative fuels need to be explored to provide additional NOx reductions.

In connection with the challenge to develop cleaner engine systems, on June 3, 2016, the EPA received a Petition, led by SCAQMD and joined by many other state air quality management agencies, to initiate rulemaking guidelines to create a national standard for ultra-low NOx heavy-duty engines. The EPA has since acknowledged a need for additional NOx reductions through a harmonized and comprehensive national NOx reduction program for heavy duty on-highway engines and vehicles. The EPA has initiated action towards proposed rulemaking for a revised heavy-duty NOx program, with the intent of proposing standards that could begin model year 2024, consistent with the lead-time requirements of the Clean Air Act and the AQMP goals. If EPA adopts a more stringent heavy-duty NOx standard for the nation, engine manufacturers will be required to step up further to develop cleaner

[3] http://www.energy.ca.gov/2017publications/CEC-600-2017-002/CEC-600-2017-002.pdf

engines, and this region will also benefit from cleaner vehicles coming into the state as part of the goods movement industry.

Fueling Infrastructure and Deployment (NG/RNG)

A key element for increased use of alternative fueled vehicles and resulting widespread acceptance 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, and even electricity are much less available or accessible, whereas natural gas and renewable fuels have recently become more readily available and cost-effective. Nonetheless, to realize emissions reduction benefits, alternative fuel infrastructure, especially fuels from renewable feedstocks, must be developed in tandem with the growth in alternative fueled vehicles. While California appears to be on track to meet its Renewable Portfolio Standard targets of 33% by 2020 and 50% by 2030 as required by SB 350 (chaptered October 2015), 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 natural gas and renewable natural gas (RNG) infrastructure and deployment (electric and hydrogen fueling are included in their respective technology categories). Changes to the Carl Moyer Program as a result of SB 513 (chaptered October 2015) may help stimulate deployment of alternative and natural gas vehicles and related infrastructure. The Clean Fuels Program will continue to examine opportunities where current incentive funding is either absent or insufficient. Market offerings such as Ford's 2016 F-150 which has the ability to run on natural gas may help further spur demand in this area.

Health Impacts, Emissions and Fuel 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). Several studies indicate that areas with high levels of air pollution 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. Considering the transition to alternative and renewable fuels, accelerated by federal and state requirements, it is important to understand the impacts that changing fuel composition will have on exhaust emissions and in turn on ambient air quality. This area focuses on exhaust emission studies, with a focus on NOx and PM2.5 emissions and a detailed review of other potential toxic tailpipe emissions, for alternative fuel and diesel engines, especially in the heavy-duty sector, as well as light- and heavy-duty engines that operate on renewable fuels or higher compression spark- ignited engines. These types of in-use emissions studies have found significantly higher emissions than certification values for heavy-duty diesel engines, depending on the duty-cycle.

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. The key 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.

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 and selective catalytic reduction (SCR) that have been developed for 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.

Technology Assessment/Transfer and Outreach

Since the value of the Clean Fuels Program depends on the deployment and adoption of the demonstrated technologies, technology assessment and 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, and coordination of these activities with other organizations. Technology transfer efforts also include support for various clean fuel vehicle incentive programs. The other spectrum of this core technology is information dissemination to educate the end user and increase awareness. While SCAQMD's Public Affairs office oversees and carries out the majority of such education and awareness efforts on behalf of the entire agency, TAO cosponsors and occasionally hosts various technology-related events to complement their efforts. These efforts range from general outreach and partnerships to convening or cosponsoring events. Some examples include: 1) partnerships with local colleges such as Cal State Los Angeles' Hydrogen Research and Fueling Facility; 2) SCAQMD's A World We Can Change high school conferences; 3) participation in the Jet Propulsion Laboratory's Annual Climate Day for middle schoolers promoting STEM education; 4) partnerships for national events such as Drive Electric Week; and 5) hosting tours of SCAQMD's clean fuel vehicle fleet and their respective fueling platforms.

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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 bring new, clean technologies to market. To reap the maximum emissions benefits from any technology, widespread deployment and 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 convention 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 and 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 cofunding research, development, demonstration and deployment projects to share the risk of emerging technologies with their developers and eventual users.

Figure 3 provides a conceptual design of the wide scope of the Clean Fuels Program. As mentioned in the Core Technologies section, various stages of technology projects are funded not only to provide a portfolio of emissions technology choices but to achieve emission reduction benefits in the nearer as well as over the longer term.

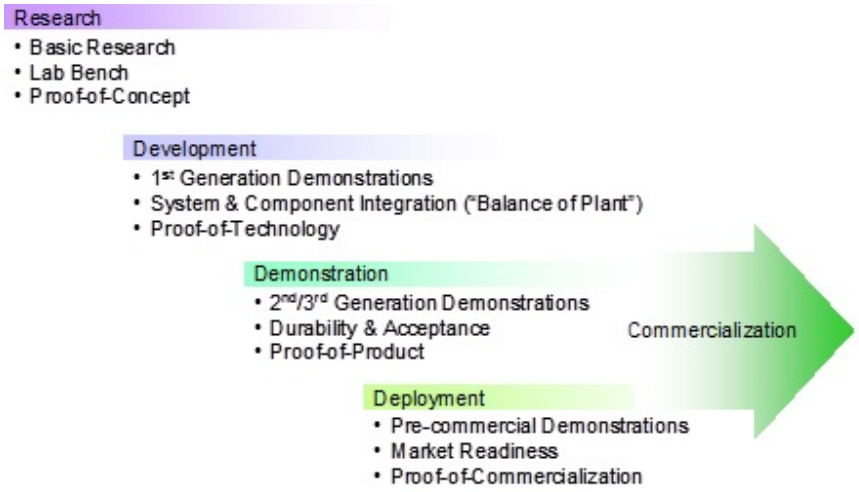


Figure 3: Stages of Clean Fuels Program Projects

Due to the nature of these advanced technology research, development, demonstration and deployment projects, the benefits are difficult to quantify since their full emission reduction potential may not be realized until sometime in the future, or perhaps not at all if displaced by superior technologies. Nevertheless, a good indication of the impact and benefits of the Clean Fuels Program overall is provided by this selective list of sponsored projects that have resulted in commercialized products or helped to advance the state-of-the-technology.

➢CNG Engine Development for Heavy-Duty Vehicles

- Emission Solutions: 7.6L (NG)
- Cummins Westport: low-NOx natural gas ISL G 8.9L engines (0.2 & 0.02 g/bhp-hr)
- 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);
- Retail light-duty passenger fuel cell vehicles (Toyota Mirai, Hyundai Tucson, Honda Clarity);
- 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 (as well as their renewable hydrogen station).
- New Flyer Transit Bus at OCTA
- UPS demonstration of fuel cell delivery trucks

- Fuel cell Class 8 trucks under Zero Emission Cargo Transport (ZECT) II Program

➢ 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 NREL, FedEx and UPS;
- 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;
- Plug-in hybrid work truck with Odyne Systems;
- Plug-in hybrid van and pickup with VIA Motors;
- BYD all-electric transit bus;
- LACMTA battery electric buses;
- Electric school buses with V2G capability; and
- TransPower/US Hybrid battery electric heavy-duty truck and yard hostlers.

➢ Aftertreatment Technologies for Heavy-Duty Vehicles

- Johnson Matthey and Engelhard trap demonstrations on buses and construction equipment; and
- Johnson Matthey SCRT and SCCRT NOx 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, 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, including but not limited to 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 California Hydrogen Business Council (CHBC) the Electric Power Research Institute (EPRI), the Electric Drive Transportation Association (EDTA), the SoCalEV Collaborative, the West Coast Collaborative, which is part of the National Clean Diesel Campaign, and the Transportation Research Board. 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 2016 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 2016 Project Summaries (beginning page 43) contained within this report.

Table 1: SCAQMD Major Funding Partners in CY 2016

Research Funding Organizations	Major Manufacturers/Providers
California Air Resources Board	BYD North America
California Energy Commission	Cummins Inc.
National Renewable Energy Laboratory	Cummins Westport, Inc.
U.S. Department of Energy	Kenworth
U.S. Environmental Protection Agency	KORE Industries
MSRC/AB 2766 Discretionary Fund Program	Peterbilt
	Ports of Los Angeles & Long Beach
	Southern California Gas Company
	TransPower
	University of California Riverside/ CE-CERT
	Volvo

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 2016. 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 zero emissions goods movement technologies; (b) development, integration and demonstration of ultra-low emission natural gas engines for heavy-duty vehicle applications; (c) development and demonstration of a Class 8 fuel cell range-extended electric drayage truck; and (d) develop and demonstrate fuel cell extended-range electric medium-duty truck and powertrain for parcel delivery trucks

Develop and Demonstrate Class 8 Zero Emission Drayage Truck Technologies

Heavy-duty diesel trucks in the South Coast Air Basin remain a significant source of emissions with adverse health impact, especially in the surrounding communities along the goods movement corridors near the Ports of Los Angeles and Long Beach (Ports), and next to major freeways. In order to mitigate

the impact and attain stringent national ambient air quality standards for the region, SCAQMD has been aggressively promoting and supporting development and demonstration of advanced zero emission cargo transport technologies, in partnership with the Southern California Regional Zero Emission Truck Collaborative, comprised of the Los Angeles Metropolitan Transportation Authority, the Ports of Los Angeles and Long Beach, the Southern California Association of Governments, and the Gateway Cities Council of Governments.



Figure 5: TransPower Battery Electric Trucks

With two grants, totaling approximately $14 million from the DOE's Zero Emission Cargo Transport (ZECT) Program, the SCAQMD has engaged leading EV integrators, including BAE Systems, Transportation Power (TransPower) and US Hybrid, as well as a major truck manufacturer, Kenworth, to develop and demonstrate a variety of Class 8 electric drayage trucks, consisting of eleven zero emission trucks – six battery electric and five fuel cell trucks – and seven hybrid electric trucks with extended range using CNG, LNG or diesel ICEs. These trucks are deployed in real world drayage operations to evaluate the trucks' performance and capability as well as to identify limitations in supporting demanding drayage duty cycles. To date, five battery electric trucks (BETs) have been completed and deployed in field demonstration with drayage fleets at the Ports. With an estimated range of 80 to 100 miles per charge, these BETs are deployed in near-dock and local operations within a 20-mile radius from the Ports and have been providing dependable service with positive feedback from fleet drivers on its quiet and smooth operations with sufficient power and torque. In addition, one CNG plug-in hybrid electric truck (PHET), with 30-40 miles in all-electric range (AER) and 150-200 miles of total operating range, is currently undergoing final validation testing before deployment and four more trucks, including two fuel cell trucks with 150-200 miles of range, are expected to be completed in Q1 2017.



Figure 4: US Hybrid CNG PHET

Leveraging the technologies and expertise gained from the ZECT program, SCAQMD proposed and received a $23.6 million grant from CARB under the Low Carbon Transportation Greenhouse Gas Reduction Fund (GGRF) Investment Program for a larger-scale demonstration of advanced electric drayage truck technologies in 2016. The project is to develop a portfolio of most commercially promising zero and near-zero emission drayage trucks for a statewide demonstration, across a variety of drayage applications in and around the Ports of Long Beach, Los Angeles, Oakland, Stockton and San Diego. SCAQMD has partnered with the four largest and most emission-impacted air districts in the state, namely Bay Area AQMD, Sacramento Metropolitan AQMD, San Joaquin Valley APCD and San Diego APCD, to build a comprehensive and coordinated approach to demonstrate the electric drayage trucks in diverse geographic and operational challenges across the state's interconnected goods movement system. For the project, the SCAQMD has successfully engaged three major truck OEMs – Kenworth, Peterbilt and Volvo, and an international OEM leader in heavy-duty electrification, BYD, to drive commercially-viable product development stages in a targeted portfolio of zero-emission and near-zero emission technologies and efficiency solutions, consisting of two battery-electric trucks, and two plug-in hybrid electric trucks with extended range capability, using natural gas or diesel ICEs, as follows:



Figure 6: BYD T9 Prototype

BYD will develop 25 battery electric trucks based on their T9 prototype, which is optimized to serve near-dock and short regional drayage routes with a range of up to 100 miles. The truck is designed to provide similar operating experience compared to equivalent diesel and CNG trucks with matching or exceeding power and torque, using two 180 kW in-line traction motors.

Kenworth will develop four plug-in hybrid electric trucks with natural gas range extender, leveraging the prototype development under the ZECT program. These vehicles will target longer regional drayage routes, based a well-balanced blend of all electric and CNG-based hybrid operation to provide 250 miles in total operating range with a capability to operate 30-40 miles in zero emission mode in disadvantaged communities near ports, rail yards and distribution centers. The powertrain system includes a 200 kW genset using the recently certified 8.9L near-zero CNG engine and two AC traction motors, with comparable power output to Class 8 diesel trucks.

Peterbilt has partnered with TransPower to develop 12 battery electric drayage trucks, building on a platform developed under the ZECT program, incorporating lessons learned from ongoing demonstrations to further refine and optimize the electric drive system. Eight of the twelve trucks will be designed to provide up to 80-100 miles in range to support near-dock drayage routes, and four extended-range battery electric trucks will incorporate a new, higher energy density battery cells to provide up to 120-150 miles of operation to service regional drayage routes, such as from the San Pedro Bay Ports terminals to Inland Empire warehouses.

Volvo will build on the success of a past SCAQMD/DOE-funded project by focusing on efficiency and emission optimization of a commercially attractive, highly-flexible product, while ensuring zero emission miles for operations in the most heavily emissions-impacted communities. Furthermore, Volvo, in partnership with LA Metro, will also integrate ITS connectivity solutions, such as vehicle-to-infrastructure and vehicle-to-vehicle communications targeting dynamic speed harmonization and reduced idling, to reduce fuel use and emissions.



Figure 7: Another BYD T9 Prototype

This exceptional portfolio features demonstrations of truly commercial-pathway trucks. Highlighting the commercial path reality of this portfolio, the principal contractors are all major heavy-duty truck OEMs. This is significant because major OEMs can bring necessary engineering resources, manufacturing capability, and a distribution/service network to support the future commercialization of these demonstration vehicles. Our partnership also includes LA Metro's participation with ITS efficiency integration, electric utility participation, and 13 confirmed end-user fleets who are experienced with the specific challenges and opportunities associated with early technology integration efforts. The relationships and technologies in this project represent a culmination of years of experience: leading truck manufacturers, innovative large and medium suppliers, air quality management districts and industry groups all coordinated in a focused push to create OEM-quality, commercially-viable products that both reduce criteria and carbon emissions.

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 NOx emissions in the South Coast Air Basin. This source category is still projected to be one of the largest contributors to NOx 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. NOx reductions in excess of 50% will be needed from all source categories to meet future federal ambient air quality standards for ozone. Diesel engines have not achieved the necessary ultra-low emission levels. Natural gas engines, such as the Cummins Westport ISL-G NZ, have achieved a 90% reduction from the 2010 NOx emission standard and are currently entering the market in new

transit buses, school buses, and medium-heavy duty trucks as an engine repower option for vehicles already equipped with 0.2 g/bhp-hr ISL-G engines. Near-zero NOx emission engines are likely to be adopted sooner and at lower cost than possible with zero emission technologies since the near-zero engine technology is an evolution of existing natural gas engines that are in widespread use in many vehicle fleets.

SCAQMD, with funding from the California Energy Commission and the Southern California Gas Company, supported development of the 8.9-liter Cummins Westport engine and a new 15-liter natural gas engine from Cummins, Inc., that could meet a target of 0.02 g/bhp-hr NOx. The engines cover a range of power and vehicle applications that represent a significant fraction of the on-road heavy duty vehicle population. In 2015, the Cummins Westport 8.9-liter ISL-G NZ (near zero) engine was certified by CARB as meeting the Optional 0.02 g/bhp-hr NOx standard. The 15-liter Cummins engine also achieved the Optional 0.02 g/bhp-hr NOx standard but it was not certified or introduced into commerce due to high capital cost of building a new engine and current limited demand. The technology, drawing from light duty natural gas engines, and optimized with extensive computer simulations and engine testing was shown to offer improved performance, fuel efficiency, and emissions compared to other heavy-duty natural gas engines that were derived from diesel engine platforms. The Cummins technology is scalable over an 8-15-liter engine size range and will be incorporated in any new natural gas engine introduced by Cummins.

In 2015, SCAQMD, with funding from the Southern California Gas Company, awarded a contract for development of an 8.8-liter V-8 natural gas engine derived from a gasoline engine design. This engine was expected to be a better fit in light-heavy duty or medium duty conventional pick-up and van chassis than engines derived from diesel engines. The project team is led by the Gas Technology Institute and uses the Power Solutions International natural gas engine with ultra-low emission technology developed by Ricardo, Inc. Design work was completed in 2016. This project is now in the prototype fabrication stage with engine testing scheduled for 2017. At this time, the project does not include vehicle integration or an on-road demonstration.



Figure 8: Typical Heavy Duty Drayage Truck

In 2016 SCAQMD, with funding from the California Energy Commission, the Southern California Gas Company, and Clean Energy, Inc., awarded a contract to Cummins Westport to develop an ultra-low NOx emission version of the 11.9-liter ISX12-G engine. This project will apply the engine and after-treatment technologies developed for the 8.9-liter ISL-G NZ engine to a larger engine better suited to drayage and regional goods movement than the ISL-G engine. Development is well underway with early Alpha prototype engines now entering the demonstration phase.



Figure 9: ISL-G Natural Gas Engine



Figure 10: 8.8-Liter PSI Natural Gas Engine

Develop and Demonstrate Class 8 Fuel Cell Range-Extended Electric Drayage Truck

The I-710 and CA-60 highways are key transportation corridors in the Southern California region that are heavily used on a daily basis by heavy duty drayage trucks that transport the cargo from the ports to the inland transportation terminals. These terminals, which include store/warehouses, inland-railways, are anywhere from 5 to 50 miles in distance from the ports. The concentrated operation of these drayage vehicles in these corridors has had and will continue to have a significant impact on the air quality in this region whereby significantly impacting the quality of life in the communities surrounding these corridors. To reduce these negative impacts, it is critical that zero and near-zero emission technologies be developed and deployed in the region. A potential local market size of up to 46,000 trucks exists in the South Coast Air Basin, based on near-dock drayage trucks and trucks operating on the I-710 freeway.

Under project management by CTE, BAE Systems and Kenworth Trucks, this effort will develop a battery electric truck with a hydrogen range extender. This project will leverage the expertise of BAE Systems and Ballard Power Systems to test their hybrid electric fuel cell propulsion system, currently used for transit buses, in drayage applications. The power output of the electric drive train is comparable to currently used Class 8 truck engines power output. The vehicle will operate primarily from the batteries, engaging the fuel cell system only when the batteries reach a specified state of charge; BAE anticipates that the truck will provide approximately 112 miles of range between re-fueling.

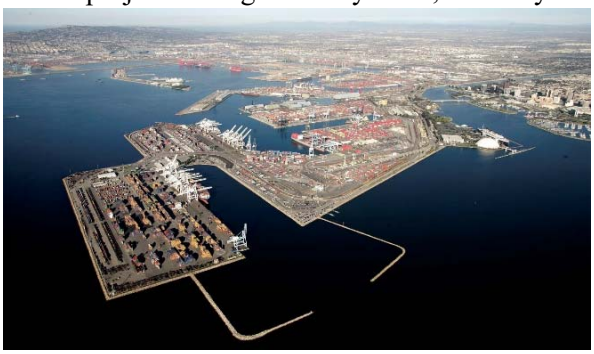


Figure 11: Los Angeles-Goods Movement and Industrial Corridor



Figure 12: Proposed Kenworth Truck Chassis

The primary objective for this project is to reduce criteria pollutants in the South Coast Air Basin by reducing diesel emissions from the transportation and movement of goods from the ports to intermodal and warehousing facilities throughout Southern California. Our technical objective is to accelerate the introduction and penetration of fuel cell technologies into the cargo transport sector, which will help achieve our primary objective to substantially reduce criteria pollutants, and as a side benefit, reduce petroleum consumption and greenhouse gases. Fuel cell range extenders, however, faces many challenges in the process of commercialization: proper sizing of the fuel cell stack, battery and fueling system; system integration and packaging of power train components and systems for safe, efficient and economical deployment of the technology are just a few of the challenges.

The proposed project area is known as the Los Angeles Goods Movement and Industrial Corridor. This area is adjacent to the Ports of Long Beach and Los Angeles, the busiest port complex in North America. The area is also a known Environmental Justice Community made up of predominantly low-income and minority populations.

Develop and Demonstrate Fuel Cell Extended-Range Electric Medium-Duty Truck and Powertrain for Parcel Delivery Trucks

Transitioning to zero and near-zero emission vehicles is one of the objectives of the Draft 2016 AQMP control strategies to attain Federal air quality standards for the South Coast Air Basin. According to UPS their parcel delivery Class 6 truck chassis go through several diesel repowers during its lifecycle which improves the return on assets for the company. In the transition to zero emission vehicles in the medium duty vehicle sector repowering to electric would make both economic and environmental sense for parcel delivery services like UPS.

UPS and CTE have joined together to develop an electric van with a fuel cell range extender. CTE sought and received funding from the DOE and CEC for the development of a fuel cell walk-in van. These vans will have a smaller battery and a small fuel cell with hydrogen storage to meet the majority of range needs for UPS and also the ability to refuel with hydrogen quickly for longer routes.



Figure 13: UPS Truck Chassis for Conversion

The Fuel Cell Hybrid Electric Medium-Duty Truck project offers substantial air quality and other environmental benefits. The project will help eliminate criteria pollutant and greenhouse gas emissions with fuel cell hybrid electric parcel delivery trucks. Unlike typical EV deployments, which usually displace cleaner current year diesel engines through annual retirement and purchasing plans, this proposed project will immediately terminate the use of a pre-2006 diesel engine that would otherwise continue to operate for many more years. The repowered vehicles will eliminate PM2.5 emissions completely, and will result in significant healthcare cost savings due to the elimination of harmful emissions throughout California communities.

This project is proposed in two-phases. In Phase 1, a pre-2006 model diesel-powered walk-in van will be converted to electric drive and then integrated with the fuel cell, power electronics, hydrogen storage system and controls. If the performance specifications are met and DOE approves Phase 2 will commence. In Phase 2, additional fuel cell hybrid walk-in vans will be built for operation under real-world conditions at UPS's distribution facilities in Northern California and in the South Coast Air Basin for at least 5,000 hours of operation. At least four of the vehicles will be deployed in the South Coast Air Basin. Any design updates will be incorporated due to lessons learned from the demonstration and validation phase.



Figure 14: Phase 1 Vehicle Modeling

In addition to co-funding the Fuel Cell Hybrid Electric Medium-Duty Trucks project, SCAQMD is also co-funding a related project with UPS and Calstart. That project seeks to develop a medium-duty fuel cell extended-range delivery truck with the fuel cell provided by another OEM for demonstration in parcel delivery services at the UPS Ontario Regional Hub. The demonstration project will validate the performance and reliability of a fuel cell hybrid electric powertrain, as well as to assess its commercial viability in urban delivery operations.

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 2016 reporting period illustrate the impact of the SCAQMD's technology deployment and commercialization efforts and include: (a) construction of renewable natural gas production facilities and vehicle demonstrations; (b) hydrogen infrastructure rollout efforts throughout the year; and (c). electric/hybrid vehicle and infrastructure deployment and commercialization efforts in 2016.

Alternative Renewable Natural Gas (RNG) Fuel Development, Demonstration and Deployment

Air quality in the South Coast Air Basin (SCAB) is significantly impacted by emissions from on-road heavy-duty vehicles (HDVs). These vehicles consume significant amounts of fossil fuel which contribute to local NOx and PM emissions as well as GHG emissions. Near-zero NOx natural gas engines fueled with renewable natural gas (RNG) provide a commercially proven and cost effective strategy to reduce NOx emissions in the near term as well as help reduce GHG emissions from U.S. on-road HDVs. The development and use of RNG as a transportation fuel also helps to solve additional California goals including the 50% Renewable Portfolio Standard, the Low Carbon Fuel Standard, and the 75% diversion of organics from landfills. Locally produced and consumed RNG helps to reduce emissions of methane associated with out-of-state natural gas, and it transportation and distribution. Finally, as a transportation fuel, RNG has the lowest carbon intensity of all the heavy-duty, internal combustion engine-driven truck pathways. Three contracts executed in 2016 are contributing to the local production and use of RNG as a transportation fuel, demonstrating the use of RNG in near-zero NOx emission heavy-duty vehicles, and providing greater public awareness of CNG and RNG as a viable and cost effective transportation fuel.

CR&R Incorporated Environmental Services' (CR&R) Anaerobic Digestion and Biomethane Facility (ADBF) in Perris, CA is a large scale biomass to renewable natural gas (RNG) production project located in the South Coast Air Basin. The CR&R ADBF is designed to be constructed in four phases and has received financial support from the California Energy Commission and Cal Recycle to implement Phases 1 and 2. CR&R's ADBF is deemed a "zero-waste" operation by the waste collection industry as it produces no waste products. The anaerobic digesters convert the biomass feedstock into gases that are conditioned to pipeline quality methane, and the remaining solids and liquids are returned into the carbon cycle as compost, soil amendment and fertilizer to help promote new plant growth and animal feed, and other related organics that can result in new biomass feedstock. The vehicles used to collect the feedstock are powered with the RNG produced at the ADBF to collect additional feedstock, closing a renewable biofuel cycle and reducing or eliminating the use of fossil-based CNG in this cycle. Nationally and globally, using locally produced RNG as a transportation fuel displaces petroleum-based or fossil based transportation fuels, reduces GHGs, and helps address transmission-related emission impacts from out-of-state produced natural gas and its transportation and pipeline distribution.

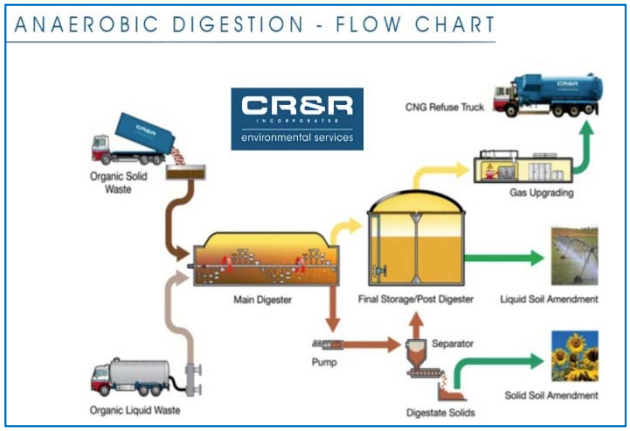


Figure 15: CR&R's Anaerobic Digestion Flow Chart

The contract with CR&R is to support the second phase of four phases of the ADBF, the production of RNG in excess of CR&R's fleet demand, the introduction of pipeline quality RNG into the Southern California Gas Company's natural gas grid, and the demonstration of RNG in near-zero NOx emission heavy-duty natural gas engines that meet or exceed CARB's Optional Low-NOx Standard. CR&R's ADBF will convert high solids organic waste from residential and commercial refuse and green wastes into RNG and soil amendments and fertilizers. The contract will also demonstrate the use of this local RNG in at least two different near-zero emission on-road heavy-duty solid waste collection type vehicles. The vehicles will be owned and operated by CR&R and will be powered by the 8.9L Cummins Westport (CW) ISL G NZ that is currently CARB certified to 0.02gNOX/bhp-hr. This engine is used in many curbside collection vehicles. The other engine is expected to be the CW 11.9L ISX12 G NZ that is being developed for CARB certification to same Optional Low NOx Standard as the ISL G NZ. The larger engine is used in transfer trucks. These "demonstration vehicles" will be deployed into CR&R's fleet and will perform routine solid waste collection services in the SCAB and provide reporting information on various performance parameters.

The CR&R ADBF project will help expand the production of locally produced RNG. Each phase of the ADBF is expected to produce 890,000 diesel gallon equivalents (DGE) of RNG annually. The expected goals of this project include the completion of Phase 2, the doubling of RNG production (from Phase 1), the demonstration of this fuel in a minimum of two near-zero emission heavy-duty natural gas powered refuse collection vehicles, and the successful introduction of RNG into the local natural gas pipeline grid.



Figure 16: CR&R's Anaerobic Digester

In addition to the expected local air quality benefits associated with this project, expansion of the ADBF is expected to help State programs such as AB 32 by reducing an estimated 15,000 metric tons per year of greenhouse gases (GHGs) that can be attributed to decomposition of these organic

wastes in landfills and, recently adopted legislations, AB1826 and AB1594, which require diverting organic waste from landfills and directing this waste product to recycling operations.

KORE Infrastructure, LLC recently completed a six year pilot program with the Los Angeles County Sanitation District (LACSD) to develop a biosolids to renewable biofuels process. KORE's proprietary system uses pyrolysis to thermochemically decompose the organic materials from partially treated waste water it receives from public owned treatment works (POTW), into syngas and biochar. The syngas comprised of hydrogen, carbon monoxide, carbon dioxide, and methane is catalytically and chemically reformed into biofuel such as renewable natural gas (RNG) and the resulting solids, known as biochar (carbon), is used as a soil amendment.



Figure 17: KORE Pyrolysis Unit

This project supports the construction, operation, and production of a commercial scale Biosolids to Transportation Fuel (BTF) facility in the City of Rialto, CA. KORE will design, construct and operate the BTF based on the extensive work and data collected in the pilot program with LACSD. Due to its location, the feedstock will be transported by truck from the POTW to the BTF where it will be received in an odor controlled solids handing area. The feedstock will be partially heated to remove moisture prior to being transferred into the pyrolysis chamber where indirect heat at high temperature and low vacuum to produce the pyrogas and solid biochar. The pyrogas is cleaned and conditioned to remove contaminants, resulting in a cleaned syngas. The cleaned syngas is upgraded to RNG via a methanation process that combines the carbon monoxide, carbon dioxide, and hydrogen into CH4 or RNG. The RNG is then compressed and stored or consumed as a transportation fuel or injected into the natural gas pipeline. Offtake agreements including injection into the pipeline grid and biochar distribution are to be defined under this contract. This project will also demonstrate the use of locally produced RNG as transportation fuel in conventional and near-zero NOx CNG-powered vehicles. KORE will demonstrate the RNG in two of its natural gas-powered heavy-duty vehicles, each vehicle to have engines and exhaust system certified by the California Air Resources Board (CARB) to a NOx emission standard equal to or less than 0.02gNOx/bhp-hr. The KORE project is expected to produce up to 1,000 gasoline gallon equivalents (GGE) of RNG per day.



Figure 18: Methanation

Ontario CNG Station, Inc. (Ontario CNG) is a public access fueling facility located adjacent to the Ontario International Airport and the I-10 freeway corridor. The facility has all the appearances, amenities and visibility of a retail conventional fuel station. It is located at a well-travelled intersection and has driveway access from both from Vineyard Ave. and E. Holt Blvd. The facility sits on 53,000 square feet of property and has four fueling islands, a 24 hour per day / 7 day per week manned convenience store, restrooms, and a car wash giving consumers a conventional



Figure 19: Ontario CNG Station

fueling experience. Retail fuels that are sold at this facility include gasoline and diesel, renewable diesel, CNG/RNG (with RNG incorporated into the supply), hydrogen and electric vehicle charging ports. Two of the four fueling islands are dedicated to conventional fuels and renewable diesel. The other two islands have a total of four CNG dispensers and one hydrogen fuel dispenser. This project will also introduce RNG to Ontario CNG and requires a minimum of 240,000 GGE of renewable natural gas (RNG) annually for three years. The hydrogen fuel will be produced on-site by an electrolysis system funded through the CEC and the SCAQMD. Adjacent to the convenience store is one DC Fast charger and two Type 2 electric chargers. Funding support for the EV system is from the CEC. The 9,000 square feet of canopy covering the fueling islands will be equipped with electric photovoltaic solar panels to help offset electricity usage. The large area and multiple fueling island design of the station provide easy access to motorists, particularly long-haul tractor trailer rigs.

As a business model, Ontario CNG believes co-locating alternative fuels with conventional fuels in a conventional and familiar retail setting helps attract customers and also allows the business to be price competitive and profitable. In addition, co-locating alternative fuels with conventional fuels helps bring greater awareness of alternative fuels to the general public.

The objective of this contract is to successfully implement the expansion of CNG/RNG fueling at a public access, multi-fuel retail station in Ontario, California near the well-travelled Interstate 10 freeway and the Ontario International Airport. The location of this station will provide incentive for goods movement operators, municipal fleets, school districts and private fleet operators to adopt or expand the use of natural gas vehicle technology. This project will support increasing CNG/RNG fuel capabilities and fuel delivery systems, particularly for heavy duty Class 7 and 8 vehicles, and introduce the use and dispensing of renewable natural gas at this station.



Figure 20: Class 8 and MDV CNG Refueling

This contract will result in doubling on-site CNG/RNG compression to 972 cfm, doubling the number of dispensers to four and expanding on-site CNG/RNG storage by 36,000scf. The two new fast-fill dispensers each have two fuel hoses that dispense CNG/RNG at 3600 psig; two of the four CNG/RNG dispensers have one hose that employ a high flow Type 2 nozzle that is specifically designed to fuel heavy-duty long range tractor trailer vehicles which typically have 150 GGE of on-board storage. The expected result of this station design and equipment selection is a faster and more efficient refueling experience for all CNG vehicle operators.



Figure 21: CNG Storage Spheres

Hydrogen Infrastructure Rollout Efforts throughout 2016

For 2016, the SCAQMD continued to identify the development and deployment of hydrogen infrastructure as one of the agency's top priorities in order to attain federal air quality standards. Hydrogen infrastructure is consistent with the Passenger Transportation and Goods Movement White Papers developed for the Draft 2016 AQMP, which was adopted by the SCAQMD Governing Board on February 3, 2016; the goods movement strategy for zero emission trucks and infrastructure outlined in SCAG's 2016-2040 Transportation Systems/Goods Movement Appendix to the Regional Transportation Plan, and CARB's 2016 Mobile Source Strategy, adopted on May 16, 2016. Zero emission truck deployment is proposed through the year 2040 to meet goals outlined in SCAG's 2016-

2040 Regional Transportation Plan/Sustainable Communities Strategy, adopted in April 2016.



Figure 22: Hydrogen Infrastructure Rollout in the SCAQMD
Source: National Renewable Energy Laboratory

As part of the planned statewide rollout of new and upgraded hydrogen fueling stations, CEC and CARB released the annual Joint Agency Staff Report on Assembly Bill 8: 2016 Assessment of Time and Cost Needed to Attain 100 Hydrogen Refueling Stations in California (map above), describing 14 open retail stations, four open non-retail stations, and 14 stations and a temporary fueler in the process of being constructed and/or upgraded within the South Coast Air Quality Management District in the 2017-2018 timeframe. California as a whole has 25 retail hydrogen stations open from San Diego to San Francisco and Lake Tahoe. The newest rollout of hydrogen fueling stations are considered retail hydrogen stations because they are typically embedded within an existing gasoline station. Examples of recently opened retail hydrogen stations include Air Liquide system at the 76 station in Anaheim and the Linde system at the 76 station in San Juan Capistrano; retail stations to be opened in 2017-2018 include the Shell station in Torrance, 76 station in Ontario and Hyundai Chino station. Examples of retail hydrogen stations are shown in Figures 23-25. SCAQMD is cofunding, in conjunction with CEC (whose AB 118 dollars are the primary source of funding), most of the retail hydrogen stations under construction in our region, including FirstElement's eight station contract and H2 Frontier's temporary mobile fueler contract, both executed in 2016.



Figure 23: CDFA/DMS Testing Air Liquide System Co-located at Anaheim 76 station with NREL HyStEP Equipment



Figure 24: San Juan Capistrano Retail Hydrogen Station Co-located by Linde at 76 Gas Station

Linde delivers liquid hydrogen to the 350 kg/day hydrogen station in San Juan Capistrano, which is an example of the largest current capacity stations. SCAQMD cofunded the station development, originally to be located in Laguna Niguel. In early 2016, SCAQMD added cofunding to help address increased costs due to the site change.



Figure 25: FirstElement Retail Hydrogen Station Co-located at ARCO Gas Station in Long Beach

Following operation of the Burbank demonstration station through 2016 with SCAQMD funds as well as some financial assistance from CARB, which is described in more detail in the Key Projects Completed section, an upgrade of the Burbank station is planned as part of a larger $6.69 million CEC grant for hydrogen upgrades including the upgrades of the Torrance and LAX stations to retail sales. As part of this CEC contract, funds for partial upgrade of the Mebtahi Chevron station in Harbor City were redirected to enable a more retail-oriented upgrade of the Burbank station, after Mebtahi was unable to execute their proposed upgrade contract.

Current retail hydrogen stations include point of sale (POS) dispensers capable of conducting retail transactions for the sale of hydrogen on a per kg basis using credit cards, and meet hydrogen quality, metrology and fueling protocols to ensure a safe, fast, full fill. Collectively, the stations would meet Renewable Portfolio Standard (RPS) requirements for providing hydrogen fuel with at least 33% renewable hydrogen. Some of the stations such as the Hyundai Chino station are designed to provide 100% renewable fuel. The renewable hydrogen requirement is fulfilled by solar, energy storage or renewable energy certificates, providing 100% renewable electricity to the station such as for local generation using an electrolyzer or reformer, or by the delivery of 33% or 100% renewable hydrogen produced by a central natural gas reformer, or by a mix of local generation and delivered hydrogen.

The California Department of Food and Agriculture, Division of Weights and Measures (DMS), must pre-certify POS dispensers so that stations can legally sell hydrogen by the kilogram to refuel fuel cell vehicles. DMS is continuing its metrology field testing effort on hydrogen dispensers in 2017.

Previously, U. S. DOE, along with automakers and other stakeholders, launched H2USA, a public-private partnership to address key challenges of hydrogen infrastructure. U. S. DOE, through H2First, a consortium of national labs, funded NREL to develop a new Hydrogen Station Equipment Performance (HyStEP) device to validate or audit fill performance of hydrogen stations to meet SAE J2601 light-duty fueling protocol using test method CSA HGV 4.3 under development. SCAQMD (with CARB, CEC, CaFCP and automakers) will be executing a contract in 2017 to support HyStEP to test stations in California.

Following completion of the 100% renewable non-retail hydrogen station at the Orange County Sanitation District facility in Fountain Valley which had been operated by Air Products and Chemicals,

Inc. from 2009 through 2015, SCAQMD is seeking partners and planning to support larger capacity hydrogen stations, including increasing production from renewable sources.

Previously, Energy Independence Now (EIN), in partnership with SCAQMD, completed a project to develop a Hydrogen Network Investment Plan (H2NIP) in order to examine market success factors relative to the looming launch of FCVs and support infrastructure.

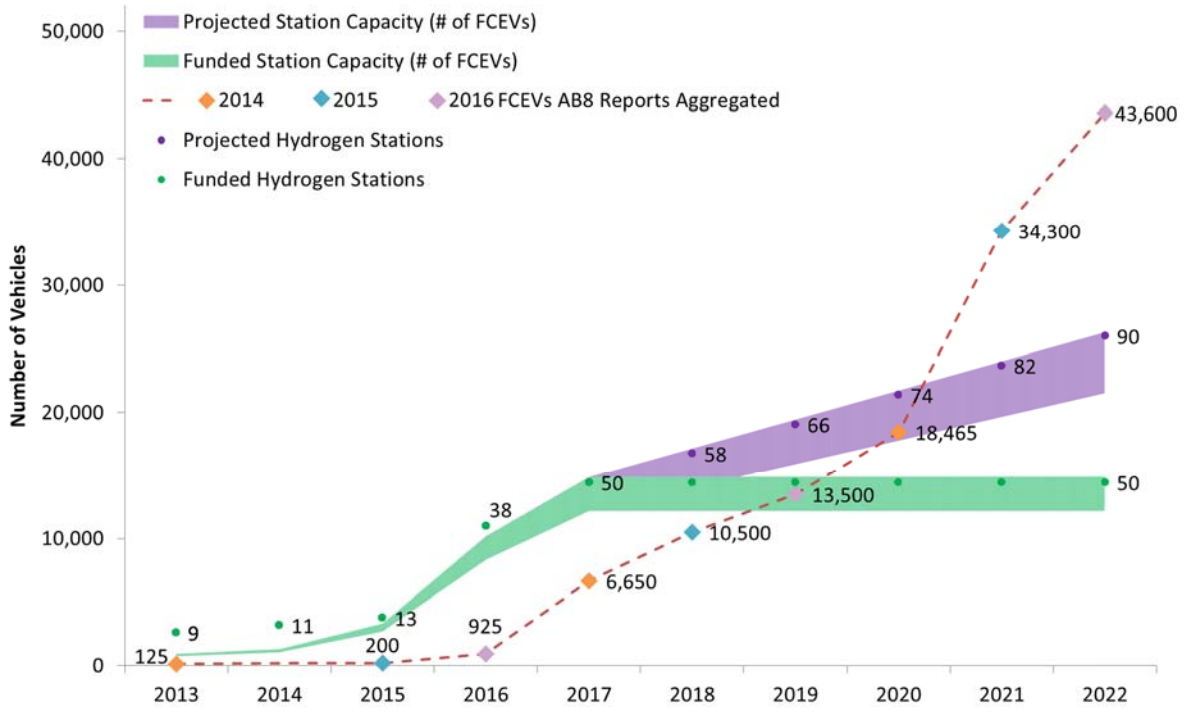


Figure 26: Station Shortfall Projection
Source: Joint Agency Staff Report on AB 8 released January 2017

Further research into renewable hydrogen pathways, economics and incentive structures is ongoing in order to establish and validate viable actions that stakeholders can take to ensure that the FCV community maximizes reductions in carbon emissions and other pollutants with adverse impacts to public well-being. This work is of critical importance in the developmental phase of support infrastructure.

Work conducted by EIN towards development of the H2NIP and effectiveness of incentives in the renewable hydrogen market was part of a larger hydrogen readiness project funded by CEC with the California Fuel Cell Partnership, "Hydrogen Readiness in Early Markets: Best Practices to Support the Introduction of Hydrogen Fuel Cell Vehicles in California".

The hydrogen readiness project examined potential policy proposals, incentives and financing options, as well as looking at best practices, training to emergency responders, procurement strategies, education outreach and assessing hydrogen readiness in early market communities. The hydrogen readiness project was completed in 2016, and key recommendations included:

- Make hydrogen from renewable sources eligible for credits under California's Low Carbon Fuel Standard. This will create an additional revenue stream to help producers cover costs.
- The average time to permit and build a hydrogen station has decreased significantly in just a few years. Shortening the process further is possible through improved understanding of codes and standards by authorities having jurisdiction.

- Station owners need succinct messaging about the benefits of adding a hydrogen fueling station and realistic information about the number of cars they can expect to fuel.
- For fire and safety training, train-the-trainer courses are vital for reaching all firefighters.
- Targeted messaging to ZEV buyers and fleet buyers will encourage increased adoption of FCEVs, and a wide-reaching awareness campaign will help other audiences select FCEVs for their future car purchase.
- Government and industry participation in stakeholder organizations is critical to reducing station costs and bringing more renewable hydrogen into the fuel supply.

The next couple of years should reveal huge strides in fuel cell vehicle technology and hydrogen infrastructure growth, and SCAQMD plans to continue to be a leader in this core technology.

Electric/Hybrid Vehicle and Infrastructure Deployment and Commercialization Efforts in 2016

The SCAQMD has identified the development and deployment of electric vehicle (EV) infrastructure as one of the agency's top priorities in order to attain federal air quality standards. EV infrastructure is consistent with the goods movement strategy for zero-emission trucks and infrastructure proposed in SCAQMD's 2017 *Air Quality Management Plan*, SCAG's 2016 *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 deployment is proposed through the year 2040 to meet goals outlined in the 2016 *Regional Transportation Plan/Sustainable Communities Strategy*.

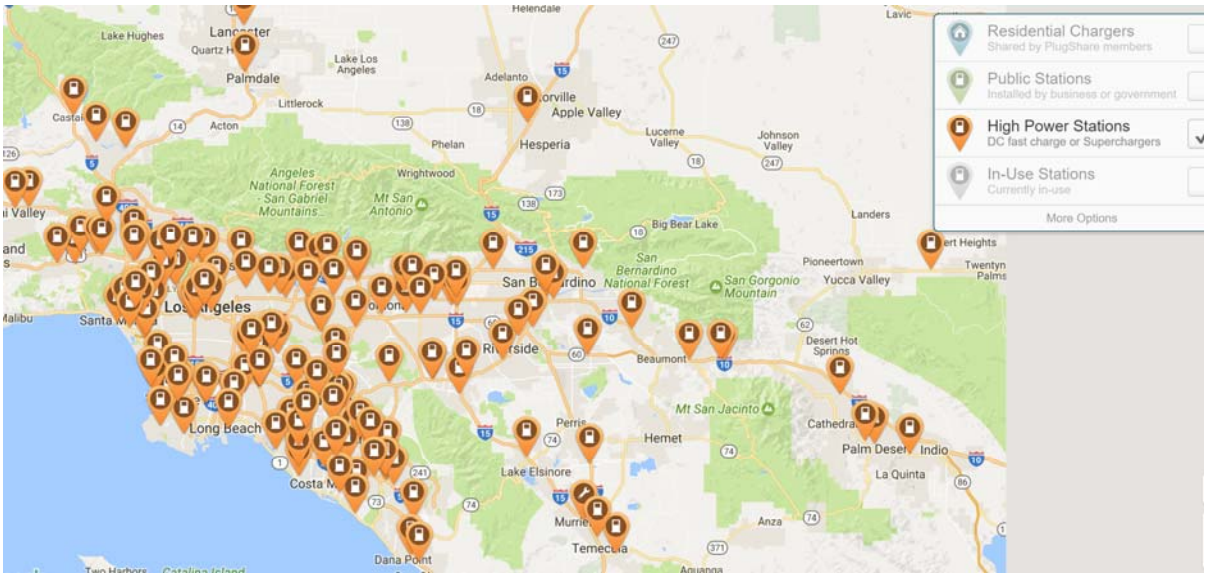


Figure 27: DC Fast Charging Station in SCAQMD

The California Public Utilities Commission has also recognized transportation electrification and recently permitted investor-owned utilities (e.g., Southern California Edison locally) to invest in charging infrastructure. California expects to be the largest U.S. market for Plug-In Electric Vehicles (PEVs), especially in the greater Los Angeles region with over 44% of the state's population and a historic and ingrained car-centric culture. As part of the planned statewide rollout of new DC fast charging corridors funded by CEC (see Figure 28), there are 27 DC fast charging stations sited along major freeway corridors that have been completed or in the process of construction by CEC funded projects managed by SCAQMD in the 2017 timeframe. This will extend the growing DC fast charging corridor east and west to locations in the Coachella Valley, further connecting Los Angeles, San Diego, Santa Barbara and Palm Springs.



Figure 28: CEC Funded DC Fast Charging Corridors in SoCal

For this project SCAQMD is partnered with EVgo as the network provider who will own, operate and maintain the DC fast charging network; Clean Fuel Connection, Inc. as the installation partner; UCLA Luskin Center for Innovation who is responsible for site selection modeling; and Three Squares, Inc. who organizes press events and is designing an education outreach campaign targeted to EV drivers.

Site locations were selected using UCLA Luskin Center's sophisticated PEV adoption modeling software that seeks to maximize charge station utilization by identifying travel patterns between census tracts where PEV drivers actually reside, work and shop. This is combined with land use data on local densities of workplaces, MUDs and retail establishments, data on pre-existing charging station locations. Finally, demographic data and the characteristics of the local transportation system are used as described in the *Southern California PEV Readiness Plan* (written by the UCLA Luskin Center and winner of the 2013 Planning Excellence Award by the Los Angeles section of the American Planning Association). Project partners also provided input on the site selection and site substitution process. The UCLA Luskin Center analyzed selected locations to maximize the effectiveness of the overall DCFC deployment.

Project sites were selected because these sites are situated alongside major freeways linking urban areas on heavily traveled routes and highly visible locations. The sites selected for the DC fast charging stations are in the parking lots of grocery stores or similar destinations. These are ideal locations for DC fast charging stations because the average consumer visiting a grocery store spends over 30 minutes shopping, which provides enough time for a complete charge. Chargers will provide 24-hour public access.

Examples of recently opened DC fast charging stations are located at the City of Calabasas City Hall (see Figure 29) and City of Palm Desert City Hall. An additional five DC fast charging stations will be installed by April 2017, and an additional 20 DC fast charging stations will be installed by December 2017. These DC fast charging stations are located throughout the four-county SCAQMD jurisdiction. Locations include the Cities of Moreno Valley, Palm Springs, Temecula, Monterey Park, and West Hollywood. Sites are part of the larger EVgo network and can be accessed using pay per use or subscription payment.



Figure 29: DC Fast Charging Station at City of Calabasas City Hall

Prior to each station opening, Three Squares will organize a custom press event to inform the public about the availability of a new DC fast charging station and educate consumers. Press events will take different formats based on the needs of each city. Below is a postcard advertising the grand opening of the DC fast charging station at the City of Calabasas City Hall, which took place in August 2016.



Figure 30: SoCalFast Education Outreach Campaign for PEV Drivers

Installation of EV Infrastructure at SCAQMD Headquarters

In September 2016, the Governing Board approved the execution of a contract with Clean Fuel Connection, Inc. to install Level 2 charging stations at the SCAQMD headquarters facility. Installation of charging stations took place in several phases.



Figure 31: Areas of EV Charger Installations at SCAQMD Headquarters

The first phase of installation of 36 Level 2 charging ports in the upper deck parking lot was completed in December 2016. An additional 25 level 2 charging ports were installed under the solar carport and upper deck in January 2017, to be followed by 15 charging ports in the CC8 parking lot and 12 charging ports in the front lobby/guest parking lot in spring 2017.



Figure 32: Installations in Progress

As part of this installation project, EV charger transactions and user notifications are managed through the Greenlots Sky networking software platform and data from the EV chargers are collected on the Greenlots network and will be shared with the future Siemens energy management system (EMS) that will be purchased and installed at SCAQMD headquarters. As part of the tie in with the building's EMS, electricity demand from the EV chargers can be ramped down or turned off in response to the building's overall demand and to avoid demand charges during peak hours in the summer months. The charging stations can be accessed through the Greenlots phone app or the RFID card and users will automatically be notified by text or email when a charging session starts, ends, is interrupted, ramped down, turned off, or subject to a different rate structure. Screens from the Greenlots phone app are shown below in Figure 33.

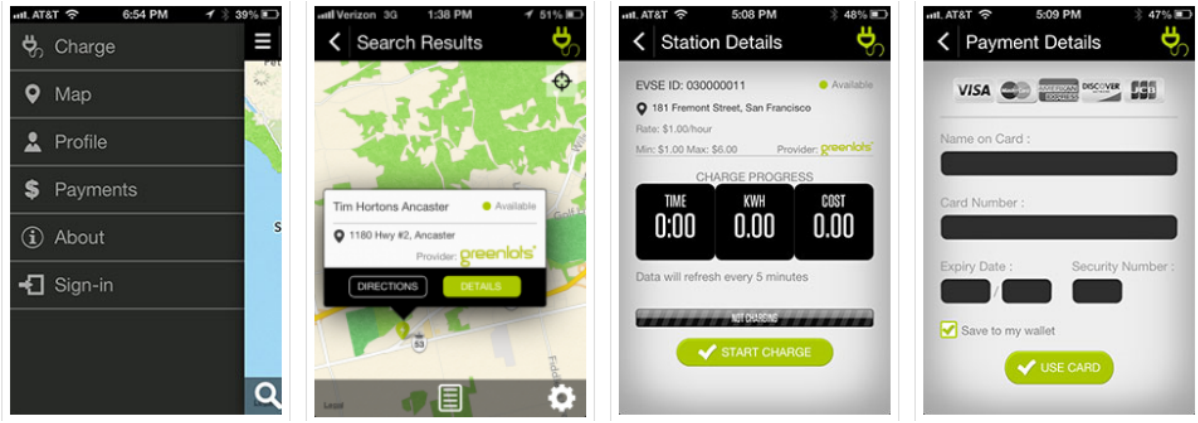


Figure 33: Greenlots Phone App and Networking Software

2016 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 5), 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, 2016.

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 from January 1 through December 31, 2016, a total of 66 contracts, projects or studies that support clean fuels were executed or amended, as shown in Table 2 (page 38). The major technology areas summarized are (listed in order of funding priority during the CY): engine systems, electric/hybrid technologies and infrastructure, fueling infrastructure and deployment, hydrogen and mobile fuel cell technology and infrastructure, engine systems, technology assessment/transfer and outreach, and fuels and emission studies. The distribution of funds based on technology area is shown graphically in Figure 34 (page 36). 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 2016 reporting period are shown below with the total projected project costs:

- SCAQMD Clean Fuels Fund Contribution $21,760,365
- Total Cost of Clean Fuels Projects $198,190,157

Each year, the SCAQMD Governing Board approves funds to be transferred to the General Fund Budget for Clean Fuels administration. For 2016, the Board transferred $1 million for workshops, conferences, cosponsorships and outreach activities as well as postage, supplies and miscellaneous costs for participation in special conferences. Only the funds committed by December 31, 2016, are included within this report. Any portion of the Clean Fuels Funds not spent by the end of Fiscal Year 2016-17 ending June 30, 2017, 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 2015 totaling $3.42 million is listed within Table 3 (page 41).

Appendix B lists the 93 Clean Fuels Fund contracts that were open and active as of January 1, 2017.

For Clean Fuels executed and amended contracts, projects and studies in 2016, the average SCAQMD contribution is approximately 11 percent of the total cost of the projects, identifying that each dollar from the SCAQMD was leveraged with more than $9 of outside investment. The typical leverage amount is $3-$4 for every $1 of SCAQMD Clean Fuels funds, but 2016 notably had

several significant contracts, significant both in funding and in the impact they hopefully will make in strides toward developing and commercializing clean transportation technologies.

During 2016, the distribution of funds for SCAQMD executed contracts, purchases and contract amendments with additional funding for the Clean Fuels Program totaling approximately $21.8 million are shown in Figure 34 below.

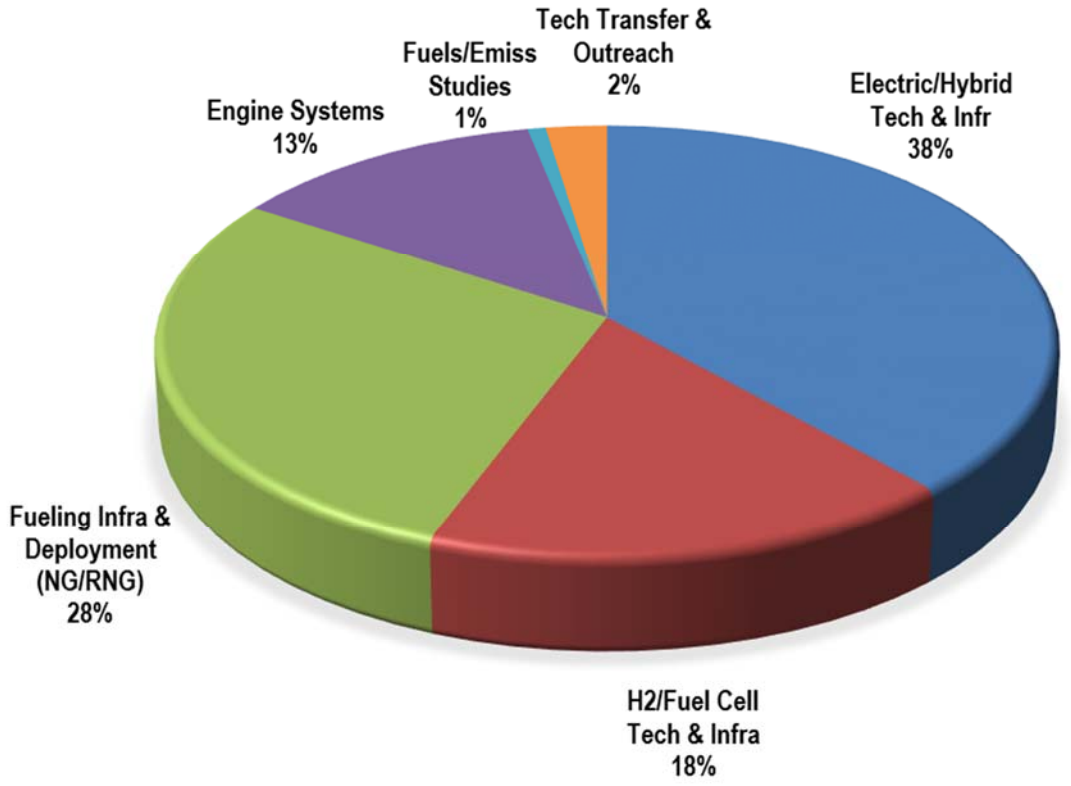


Figure 34: Distribution of Funds for Executed Clean Fuels Projects CY 2016 ($21.8M)

Table 2 (page 38) provides a breakdown of this $21.8 million in executed contracts. Table 3 (page 41) provides information on outside funding recognized and received into the Clean Fuels Fund ($3.42 million) for contracts executed in CY 2016. Additionally, the SCAQMD continued to seek funding opportunities and Table 4 (page 41) lists the additional $48.9 awarded in 2016 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, 2016, 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 66 new and continuing contracts, projects and studies that received SCAQMD funding in 2016 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, 2016

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Hydrogen/Mobile Fuel Cell Technologies and Infrastructure						
12057	Linde, LLC	Expand Hydrogen Fueling Infrastructure	11/02/12	04/01/19	80,000	160,000
15618	FirstElement Fuel, Inc.	Installation of Eight Hydrogen Stations in Various Cities (two renewable, six delivered)	02/05/16	02/04/21	1,000,000	16,442,000
15635	Center for Transportation and Environment	ZECT II: Develop and Demonstrate One Class 8 Fuel Cell Range-Extended Electric Drayage Truck	04/27/16	10/26/20	821,198	7,109,384
16025	Center for Transportation and the Environment	Develop and Demonstrate Fuel Cell Hybrid Electric Medium-Duty Trucks	02/05/16	08/04/20	980,000	7,014,050
16251	H2 Frontier, Inc.	Develop and Demonstrate Commercial Mobile Hydrogen Fueler	05/06/16	05/05/21	200,000	1,665,654
17030	Bevilacqua-Knight, Inc.	Participate in California Fuel Cell Partnership for Calendar Year 2016 and Provide Support for Regional Coordinator	01/0/1/16	12/31/16	135,000	1,705,233
17059	Calstart Inc.	Develop and Demonstrate Fuel Cell Extended-Range Powertrain for Parcel Delivery Trucks	10/27/16	04/26/18	589,750	1,574,250
Electric/Hybrid Technologies and Infrastructure						
13410	Selman Chevrolet Company	Lease Three 2013 Chevrolet Volt Extended-Range Electric Vehicles for Three Years Then Purchase Vehicles	04/03/13	04/02/16	84,450	84,450
13429	Longo Toyota	Lease One Toyota RAV4 Electric Vehicle for Three Years Then Purchase Vehicle	04/19/13	04/02/16	22,410	22,410
14184	Clean Fuel Connection, Inc.	DC Fast Charging Network Provider	04/04/14	06/30/20	920,000	1,153,880
16200	California State University Los Angeles	Cost-Share Regional Universities for U.S. DOE EcoCAR 3 Competition	04/14/16	04/15/20	100,000	800,000
16227	Selman Chevrolet Company	Lease One 2016 Chevrolet Volt Extended-Range Electric Vehicle for Three Years	02/01/16	01/31/19	15,677	15,677
16081	Broadband TelCom Power, Inc.	Provide EV Hardware and Control System at SCAQMD Headquarters including Installation Support, Warranty and Networking	04/27/16	04/26/22	367,425	367,425
17065	Clean Fuel Connection, Inc.	EV Infrastructure Installer	12/02/16	12/31/21	805,219	805,219

Table 2: Contracts Executed or Amended (w/$) between January 1 & December 31, 2016

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Electric/Hybrid Technologies and Infrastructure (cont'd)						
Transfer	Transfer from Clean Fuels	Zero Emission Drayage Truck Demonstration Project	03/04/16	03/04/16	6,001,531	40,122,470
Direct Pay	Clean Fuel Connection, Inc.	Electric Vehicle Supply Equipment Installation	01/01/16	02/29/16	20,677	20,677
Direct Pay	Southern California Edison	Short Circuit Study for Headquarters Electric Vehicle Infrastructure	01/01/16	01/01/16	400	400
Engine Systems						
16205	Cummins Westport, Inc.	Develop, Integrate and Demonstrate Ultra-Low Emission 12-Liter Natural Gas Engines for On-Road Heavy-Duty Vehicles	06/03/16	06/30/18	2,750,000	6,250,000
Fueling Infrastructure and Deployment (NG/RNG)						
16075	City of Desert Hot Springs	Purchase One Heavy-Duty CNG-Powered Truck	03/11/16	03/10/20	38,000	63,000
16244	CR&R, Inc.	Renewable Natural Gas Production and Vehicle Demonstration Project	09/03/16	03/02/20	900,000	55,000,000
16333	Ontario CNG Station, Inc.	Implement Alternative Fuel Station Expansion	05/13/16	11/12/19	200,000	798,535
17092	Kore Infrastructure, LLC	Construct RNG Production Facility and Demonstrate RNG with Next Generation Natural Gas Engine	10/14/16	10/13/21	2,500,000	25,500,000
Direct Pay	Varies	Cost-Share Local Match for 2015-16 Enhanced Fleet Modernization Program (EFMP) Plus-Up	01/08/16	01/08/16	1,033,500	8,100,500
Direct Pay	Varies	Purchase of Electric Leaf Blowers and Trimmers for Lawn and Garden Demonstration Program	03/31/16	03/31/16	4,195	4,195
Direct Pay	Varies	Cost-Share Local Match for 2016-17 Enhanced Fleet Modernization Program (EFMP) Plus-Up	09/02/16	09/02/16	1,503,000	18,209,000
Fuels/Emissions Studies						
16198	Gladstein, Neandross & Associates, LLC	Study of Opportunities and Benefits of Deploying Next Generation Heavy-Duty Natural Gas Vehicles Operating on Renewable Natural Gas	09/02/16	09/02/16	50,000	250,000
16254	University of California Berkeley	Evaluate Ozone and Secondary Aerosol Formation from Diesel Fuels	10/25/16	08/31/17	106,361	106,361

Table 2: Contracts Executed or Amended (w/$) between January 1 & December 31, 2016

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Fuels/Emissions Studies (cont'd)						
17060	University of California Riverside	Bailment Agreement for Equipment Use for In-Use Emissions Testing of Heavy-Duty Inspection and Maintenance Program	10/13/16	10/12/18	0	0
Technology Assessment/Transfer and Outreach						
08210	Sawyer Associates	Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities	02/22/08	02/28/18	10,000	10,000
17037	Clean Fuel Connection, Inc.	Technical Assistance with Alternative Fuels, Electric Vehicles, Charging and Fueling Infrastructure and Renewable Energy	11/18/16	11/17/18	50,000	50,000
17097	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alternative Fuels and Fueling Infrastructure, Emissions Analysis and On-Road Sources	11/04/16	11/03/18	100,000	100,000
Direct Pay	Hartford/Alliant Insurance	Insurance for Alternative Fuel Vehicles in Technology Advancement Office's Fleet Demonstration Program	01/01/16	12/31/16	31,414	31,414
Transfer	Transfer from Clean Fuels	Participation in California Natural Gas Vehicle Partnership for Fiscal Year 2016-17 and 2017-18	07/08/16	07/08/16	25,000	236,872
Direct Pay	Transportation Research Board	Participation for Membership for July through December 2016	09/01/16	09/01/16	32,500	223,500
Direct Pay	Various	Cosponsor 24 Conferences, Workshops & Events plus 4 Memberships	01/01/16	12/31/16	282,658	4,300,523

Table 3: Supplemental Grants/Revenue Received into the Clean Fuels Fund (31) in CY 2016

Revenue Agreement #	Revenue Source	Project Title	Contractor	SCAQMD Contract #	Award Total $
16217	Southern California Gas Company	Develop, Integrate and Demonstrate Ultra-Low Emission 12L Natural Gas Engines for On-Road Heavy-Duty Vehicles	Cummins Westport Inc.	16205	1,000,000
14051	California Energy Commission	DC Fast Charging Network	Clean Fuel Connection, Inc.	14184	420,000
15441	California Energy Commission	DC Fast Charging Network	Clean Fuel Connection, Inc.	14184	500,000
Transfer	BP ARCO Settlement Agreement Fund (46)	Construction of an RNG Production Facility in Rialto and Demonstration of RNG with Next Generation Natural Gas Engines	KORE Infrastructure, Inc.	17092	1,500,000
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 (2016).					3,420,000

Table 4: Summary of Federal, State and Local Funding Awarded or Recognized in CY 2016

Awarding Entity or Program	Award or Board Date	Purpose	Contractors	Award Total $/Fund
CARB's Low Carbon Transportation GGRF	01/12/16	Zero Emission Drayage Truck Demonstration	BYD Motors, Kenworth Truck Company, Peterbilt Motors, & Volvo Technology of America	23,658,500 Fund 67
Bay Area AQMD	03/04/16	Zero Emission Drayage Truck Demonstration	BYD Motors, Kenworth Truck Company, Peterbilt Motors, & Volvo Technology of America	3,000,000 Fund 67
San Joaquin Valley APCD	03/04/16	Zero Emission Drayage Truck Demonstration	BYD Motors, Kenworth Truck Company, Peterbilt Motors, & Volvo Technology of America	1,000,000 Fund 67
San Diego APCD	03/04/16	Zero Emission Drayage Truck Demonstration	BYD Motors, Kenworth Truck Company, Peterbilt Motors, & Volvo Technology of America	200,000 Fund 67
San Diego Gas & Electric	03/04/16	Zero Emission Drayage Truck Demonstration	BYD Motors, Kenworth Truck Company, Peterbilt Motors, & Volvo Technology of America	200,000 Fund 67

Table 4: Summary of Federal, State and Local Funding Awarded or Recognized in CY 2016 (cont'd)

Awarding Entity or Program	Award or Board Date	Purpose	Contractors	Award Total $/Fund
California Energy Commission	04/01/16	On-Road In-Use Emissions Testing and Usage Assessment	University of California Riverside & West Virginia University	2,000,000 Fund 31
Southern California Gas Company	04/01/16	On-Road In-Use Emissions Testing and Usage Assessment	University of California Riverside & West Virginia University	500,000 Fund 31
U.S. Environmental Protection Agency	06/03/16	Develop and Demonstrate Ultra-Low Emission Natural Gas Switcher Locomotive	VeRail	500,000 Fund 31
Southern California Gas Company	06/03/16	Develop and Demonstrate Ultra-Low Emission Natural Gas Switcher Locomotive	VeRail	500,000 Fund 31
CARB	09/02/16	On-Road In-Use Emissions Testing and Usage Assessment	University of California Riverside & West Virginia University	150,000 Fund 31
CARB/BAR	09/02/16	FY 2016-17 Implementation of the Retire and Replace Component of Enhanced Fleet Modernization Program	Various	3,700,000 Fund 56
CARB	09/02/16	FY 2016-17 Implementation of the Retire and Replace Component of Enhanced Fleet Modernization Program (EFMP) Plus-Up	Various	10,000,000 Fund 56
California Energy Commission	10/07/16	Develop, Integrate & Demo Ultra-Low Emission 12L NG Engines for On-Road Heavy-Duty Vehicles	Cummins Westport, Inc.	1,000,000 Fund 31
U.S. EPA 2016 Targeted Air Shed Grant	11/17/16	Battery Electric Yard Tractors Replacement Project	Westside Basin Container Terminal	2,477,250 Fund 17
Table 4 provides a comprehensive summary of revenue awarded to SCAQMD during the reporting CY (2016) if it will be considered part of, or complementary to, the Clean Fuels Program, regardless of whether the pass-through contract has been executed.				**48,885,750**

Project Summaries by Core Technologies

The following represents summaries of the contracts, projects and studies executed, or amended with additional dollars, in 2016. 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).

Hydrogen and Mobile Fuel Cell Technologies and Infrastructure

12057: Expand Hydrogen Fueling Infrastructure

Contractor: Linde, LLC	SCAQMD Cost-Share	$ 80,000
	Cosponsor	
	Linde	80,000
Term: 11/02/12 – 04/01/19	Total Cost:	$ 160,000

Linde, LLC, was originally awarded funding to demonstrate that hydrogen fueling can be successfully integrated with retail gasoline fueling stations in Laguna Niguel, an area identified by the OEMs as an early adopter location. A new site in another city but still within Orange County had to be identified after negotiations with the original site owner fell through. An amendment was executed in early 2016 to address additional permitting and local jurisdictional requirements as well as higher project costs relating to the site location change. The project timeline was also modified to provide for three years of operational reporting. The SCAQMD and Linde, LLC, equally cost-shared the higher project costs and the hydrogen station is now commissioned and in operation.

15618: Installation of Eight Hydrogen Stations in Various Cities (two renewable, six delivered)

Contractor: FirstElement Fuel, Inc.	SCAQMD Cost-Share	$ 1,000,000
	Cosponsor	
	California Energy Commission	11,608,000
	FirstElement Fuel, Inc.	3,834,000
Term: 02/05/16 – 02/04/21	Total Cost:	$ 16,442,000

First Element submitted a proposal dated February 14, 2014 to CEC's PON-13-607. CEC is providing the majority of funding with co-funding from SCAQMD to install eight public access hydrogen fueling stations in the following cities: South Pasadena, Los Angeles (2 stations), Long Beach, Costa Mesa, La Canada Flintridge, Laguna Niguel and Lake Forest. Six of the stations shall have hydrogen delivered with 33% renewable content, and the remaining two stations shall have 100% renewable hydrogen delivered. The fueling stations shall be capable of delivering up to 100 kg of hydrogen per day nominal capacity, be able to fuel multiple vehicles back to back without delay to avoid congestion, and provide data according to the template in the NREL Data Collection Tool approved by CEC.

15635: ZECT II: Develop and Demonstrate One Class 8 Fuel Cell Range-Extended Electric Drayage Truck

Contractor: Center for Transportation and the Environment	SCAQMD Cost-Share	$ 821,198
	Cosponsor	
	Department of Energy *(previously received as pass-through funds into Fund 61)*	3,554,691
	California Energy Commission *(previously received as pass-through funds into Fund 61)*	2,400,000
	Ports TAP Program *(previously received as pass-through funds into Fund 61)*	283,495
	Center for Transportation and the Environment	50,000
Term: 4/27/16 – 10/26/20	Total Cost:	$ 7,109,384

Under project management by CTE, BAE Systems will develop a battery electric truck with a hydrogen range extender. This project will leverage the expertise of BAE Systems and Ballard Power Systems to test their hybrid electric fuel cell propulsion system, currently used for transit buses, in drayage applications. The power output of the electric drive train is comparable to currently used Class 8 truck engines power output. AC traction motors will be mounted one on each rear drive axle and the electric drive train in the architecture is set up to be fully redundant. The vehicle will operate primarily from the batteries, engaging the fuel cell system only when the batteries reach a specified state of charge. BAE anticipates that the 30 kg of hydrogen (25 kg usable) will provide approximately 112 miles of range between re-fueling.

16025: Develop and Demonstrate Fuel Cell Hybrid Electric Medium-Duty Trucks

Contractor: Center for Transportation and the Environment	SCAQMD Cost-Share	$ 980,000
	Cosponsors	
	Department of Energy	2,857,560
	United Parcel Service	2,076,490
	California Energy Commission	1,100,000
Term: 02/05/16 – 08/04/20	Total Cost:	$ 7,014,050

The Fuel Cell Hybrid Electric Walk-In Van Deployment Project is proposed in two phases. In Phase 1, CTE along with its vehicle integrators will demonstrate and validate lead final analysis and design for integration of the fuel cell power train into a base electric utility vehicle. A pre-2006 model diesel-powered walk-in van provided by UPS will be converted to electric drive by one of CTE's vehicle integrators, and this base electric vehicle will be shipped to their fuel cell system integrator who will integrate the Hydrogenics fuel cell, power electronics, hydrogen storage system and controls into the electric van. At the end of Phase 1, there will be a go/no-go decision made by the DOE. If the performance specifications have been proven, CTE will request approval from DOE to initiate Phase 2-Deployment. In Phase 2, up to 17 additional fuel cell hybrid walk-in vans will be built for operation

under real-world conditions at UPS distribution facilities in Sacramento and the South Coast Air Basin for at least 5,000 hours. Up to six of the vehicles will be deployed in the South Coast Air Basin. These vehicles will also be converted from pre-2006 model diesel-power UPS vans. Any design updates will be incorporated due to lessons learned from the demonstration and validation phase.

16251: Develop and Demonstrate Commercial Mobile Hydrogen Fueler

Contractor: H2 Frontier, Inc.	SCAQMD Cost-Share	$ 200,000
	Cosponsors	
	California Energy Commission	999,677
	U.S. Hybrid	375,913
	H2 Frontier, Inc.	75,000
	Gas Technology Institute	15,064
Term: 05/06/16 – 05/05/21	Total Cost:	$ 1,665,654

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 temporary hydrogen fueler, which would be used during upgrade transitions and temporary dispensing issues. GTI has partnered with U.S. Hybrid and H2 Frontier, Inc. The temporary 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. It will use renewable fuel if possible and would be deployed at hydrogen stations as needed. SCAQMD is providing additional co funding to H2 Frontier, Inc.

17030: Participate in California Fuel Cell Partnership for Calendar Year 2016 and Provide Support for Regional Coordinator

Contractor: Bevilacqua-Knight, Inc.	SCAQMD Cost-Share	$ 135,000
	Cosponsors	
	SCAQMD (in-kind)	10,440
	7 automakers, 6 public agencies, 2 industry stakeholders, 25 Full & Associate Members	1,559,793
Term: 01/01/16 – 12/31/16	Total Cost:	$ 1,705,233

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. (BKi) for their portion of the CaFCP's administration. In 2016, the SCAQMD Governing Board contributed $85,000 for membership and up to $50,000, along with four cubicles at SCAQMD Headquarters, to provide support for the CaFCP Regional Coordinator.

17059: Develop and Demonstrate Fuel Cell Extended-Range Powertrain for Parcel Delivery Trucks

Contractor: Calstart	SCAQMD Cost-Share	$ 589,750
	Cosponsors	
	United Parcel Service	749,500
	Unique Electric Solutions, LLC	165,000
	Calstart	70,000
Term: 10/27/16 – 04/26/18	Total Cost:	$ 1,574,250

UPS and CALSTART, together with engineering/technical lead UES and project team CCW, Nuvera and Nidec, will integrate, validate and demonstrate a commercial-path, optimized Fuel Cell Range Extended Electric Delivery Truck (FCXRDT) for demonstration out of the UPS Ontario Regional Hub and using hydrogen fueling available near the facility. The project team will integrate an electric driveline, consisting of a 120 kilowatt electric motor and 45-60 kWh battery pack together with a 30kW fuel cell and roughly 10kg of hydrogen storage onto an existing UPS Class 6 delivery truck. The resulting vehicle should demonstrate a daily guaranteed range of 125 miles, 65mph top speed and diesel-equivalent or better driving performance, all with zero emissions. The project leverages in excess of $900,000 of UPS and partner investment and commitment to bring this complete driveline to the road.

Electric/Hybrid Technologies and Infrastructure

13410: Lease Three 2013 Chevrolet Volt Extended-Range Electric Vehicles for Three Years then Purchase Vehicles

Contractor: Selman Chevrolet Company	SCAQMD Cost-Share	$ 84,450
Term: 04/03/13 – 04/02/16	Total Cost:	$ 84,450

The SCAQMD operates a number of alternative fuel vehicles (AFVs) including electric vehicles (EVs), 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 and bring awareness to the public of their viability. In 2016 this lease was modified to provide for the purchase of the three 2013 Chevrolet Volts, adding them permanently to the Fleet Demonstration Program and ensuring the green carpool stickers could continue to be utilized when out in the community.

13429: Lease One Toyota RAV4 Electric Vehicle for Three Years then Purchase Vehicle

Contractor: Longo Toyota	SCAQMD Cost-Share	$ 22,410
Term: 04/03/13 – 04/02/16	Total Cost:	$ 22,410

As noted, the SCAQMD operates a number of AFVs in its Fleet Demonstration Program to support the use of zero emission vehicles and bring awareness to the public of their viability. Toyota used 40 kWh Tesla battery packs for this 5-passenger mid-sized SUV, providing the second longest-range BEV in 2012 for a modest price. In 2016 this lease for one Toyota RAV4 EV was modified to provide for the purchase of the vehicle, adding it permanently to the Fleet Demonstration Program and ensuring the white carpool sticker could continue to be utilized when out in the community.

14184: DC Fast Charging Network Provider

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share (*received as pass-through funds)*	$ 920,000
	Cosponsor	
	EVgo	233,880
Term: 04/04/14 – 06/30/20	Total Cost:	$ 1,153,880

Clean Fuel Connection, Inc. (CFCI) was previously selected as the network provider for the 27-site DC fast charging network. CFCI is working in partnership with 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. These sites will be in addition to EVgo's CPUC settlement of installing 200 DC fast chargers in California and will be integrated into the EVgo network. CFCI and EVgo will operate the network for five years beyond the date of installation and will provide pay per use and subscription payment models to users. Two installations were completed in 2016 in the Cities of Calabasas and Palm Desert, with an additional five DC fast charging stations to be completed by April 2017 and an additional 20 DC fast charging stations to be completed by December 2017. CEC has awarded two revenue grants ARV-12-053 and ARV-13-026 of $720,000 and $500,000 respectively, with an additional $883,800 in required cost sharing being provided by the project partners. DC fast chargers will be installed along major freeway corridors throughout the four-county SCAQMD jurisdiction to extend electric driving range throughout the region including to the Coachella Valley, San Diego, and Central Coast regions.

16200: Cost-Share Regional Universities for U.S. DOE EcoCAR 3 Competition

Contractor: California State University Los Angeles	SCAQMD Cost-Share	$ 100,000
	Cosponsors	
	Competition Sponsors: DOE, GM, NSF, EPRI. Team Sponsors: CSULA, Xerox, Enerdel, Modern Kit Car	700,000
Term: 04/14/16 – 04/15/20	Total Cost:	$ 800,000

EcoCAR 3 is an advanced plug-in hybrid passenger vehicle design-and-build competition sponsored by U.S. DOE and General Motors and managed by Argonne National Laboratory. California State University Los Angeles (CSULA) is the only competitor in California of 16 North American universities chosen to redesign a stock 2016 gasoline Chevrolet Camaro into a hybrid vehicle that will reduce the environmental impact of vehicles, minimize fuel consumption, retain performance, safety and consumer appeal, and provide research and innovation. For EcoCAR 3, the CSULA team has selected a police theme with pursuit capability. Switching to alternative fuels, enabling electric air conditioning, powering energy intensive loads from the battery pack and EV patrol modes will allow CSULA's vehicle to provide appreciable fuel economy along with substantial pollution and GHG reductions. Competition and Team Sponsors also contributed in-kind resources.

16227: Lease One 2016 Chevrolet Volt Extended-Range Electric Vehicle for Three Years

Contractor: Selman Chevrolet Company	SCAQMD Cost-Share	$	15,677
Term: 02/01/16 – 01/13/19	Total Cost:	$	15,677

As noted, the SCAQMD operates a number of AFVs in its Fleet Demonstration Program to support the use of zero emission vehicles and bring awareness to the public of their viability. In 2016 this lease for one 2016 Chevrolet Volt extended-range electric vehicle was executed, adding it to the Fleet Demonstration Program. The improved 2016 Volt offers many new features and up to 53 pure electric miles and up to 420 miles with a full charge and a full tank of gas and qualifies for incentives including green carpool stickers.

16081: Provide EV Hardware and Control System at SCAQMD Headquarters including Installation Support, Warranty and Networking

Contractor: Broadband TelCom Power, Inc.	SCAQMD Cost-Share	$	367,425
Term: 04/27/16 – 06/26/22	Total Cost:	$	367,425

A contract with Broadband TelCom Power, Inc. (BTC) was selected through an RFP process as the hardware provider for Level 2 charging stations to be installed at SCAQMD headquarters. BTC will provide up to 90 Level 2 charging ports in various areas of the parking lot, including the upper deck, solar carport, CC8, and front lobby. This contract was later modified to include additional funds for installation of Greenlots networking software and of a network of wifi gateways to enable EV charging stations to communicate with the Greenlots network. The Greenlots Sky networking software is able to handle EV charging sessions, provide user notifications on charging status and real-time availability, and data collection for analysis and sharing with the building's energy management system to ramp down or turn off charging activity in response to overall building demand to minimize demand charges during peak hours in the summer months. The Sky platform is also capable of customizing charging rates per kWh, per hour, flat rate, time of day, duration of charging session, or other criteria and can provide customized messaging screens to inform EV drivers of fees to be charged and limitations on dwell time at charging stations.

17065: EV Infrastructure Installer

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share	$	805,219
Term: 12/02/16 – 12/31/21	Total Cost:	$	805,219

SCAQMD had selected a contractor to install EV charging stations at SCAQMD headquarters in May 2016 but this contractor withdrew their bid. As a result, another installation contractor, Clean Fuel Connection, Inc. (CFCI) was selected to perform the installation work. Installation work commenced in October 2016 with the first phase of installation completed in January 2017. As part of this installation, there will be up to 90 new Level 2 charging ports (including up to six ADA accessible charging ports) completed in spring 2017. This project will include the replacement of existing Level 2 charging stations and upgrading of electrical infrastructure including transformers and electrical panels in multiple sections of the parking lot (upper deck, solar carport, CC8, front lobby).

Transfer: Zero Emission Drayage Truck Demonstration Project

Contractors: BYD Motors, Kenworth Truck Company, Peterbilt Motors and Volvo Technology of America	SCAQMD Cost-Share	$ 6,001,531
	Cosponsors	
	California Air Resources Board	23,658,500
	Original Equipment Manufacturers	6,062,439
	Bay Area AQMD	3,000,000
	San Joaquin Valley APCD	1,000,000
	San Diego APCD	200,000
	San Diego Gas & Electric	200,000
Term: 03/04/16 – 03/04/16	Total Cost:	$ 40,122,470

This project is to develop a portfolio of most commercially promising zero and near-zero emission drayage truck technologies for statewide demonstrations in and around the Ports of Los Angeles, Long Beach, Oakland, Stockton and San Diego, in collaboration with four other air districts: Bay Area AQMD, Sacramento Metropolitan AQMD, San Joaquin Valley APCD and San Diego APCD. For this project, SCAQMD has partnered with four major Original Equipment Manufacturers (OEMs) to build a total of 43 demonstration trucks, based on two BEV platforms by BYD and Peterbilt, that are well suited for local operations with approximately 100 miles in operating range, and two PHEV trucks, by Kenworth and Volvo respectively, to service a wider range of drayage operations with an operating range of 250 or higher miles. Participation of major OEMs with necessary technical and financial resources will not only ensure successful outcome of this demonstration, but will also lead to commercialization of these truck technologies, providing much needed air quality and public health benefits for the Basin, especially in the communities that are disproportionately exposed to harmful diesel emissions from cargo transport operations.

Direct Pay: Electric Vehicle Supply Equipment Installation

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share	$ 20,677
Term: 01/01/16 - 02/29/16	Total Cost:	$ 20,677

This project provides funds for the demonstration of Level 2 electric vehicle charging stations from several manufacturers including ChargePoint, Clipper Creek, LiteOn, AeroVironment, and BTC Power, Inc. Clean Fuel Connection, Inc. purchased and installed Level 2 chargers at various locations. These chargers have been utilized extensively by SCAQMD Governing Board members, staff, and the general public.

Direct Pay: Short Circuit Study for Headquarters Electric Vehicle Infrastructure

Contractor: Southern California Edison	SCAQMD Cost-Share	$ 400
Term: 01/01/16 – 01/01/16	Total Cost:	$ 400

The City of Diamond Bar required a short circuit study as part of SCAQMD's upgrade of electric vehicle service equipment at SCAQMD's Headquarters. This was in conjunction with the work being

performed by Broadband TelCom Power, Inc. and Clean Fuel Connection, Inc.

Engine Systems

16205: Develop, Integrate and Demonstrate Ultra-Low Emission 12-Liter Natural Gas Engines for On-Road Heavy-Duty Vehicles

Contractor: Cummins Westport, Inc.	SCAQMD Cost-Share *(partially received as pass-through funds)*	$ 2,750,000
	Cosponsors	
	California Energy Commission	2,000,000
	Cummins Westport, Inc. (in-kind)	1,000,000
	Clean Energy	500,000
Term: 06/03/16 – 06/30/18	Total Cost:	$ 6,250,000

Heavy-duty on-road diesel vehicles are projected to be among the top sources of NOx emissions in the South Coast Air Basin (SCAB) in 2023. Development of ultra-low emission engines that emit 90% lower NOx than the 2010 0.2 g/bhp-hr NOx standard would significantly reduce their emissions and assist the region in meeting federal ambient air quality standards in future years. The Cummins Westport ISL-G NZ 8.9-liter natural gas engines, developed with the funding from the SCAQMD, the California Energy Commission, and Southern California Gas Company, was certified by CARB to the Optional 0.02 g/bhp-hr NOx standard and is now in production. However, the 8.9-liter engine is too small for heavy-heavy duty vehicles in Class 8. The objective of this project is to apply the ultra-low emission engine and after-treatment technologies developed for the 8.9-liter ISL-G Z engine to the 11.9-liter ISX12-G Cummins Westport engine. The project includes (1) engine and after-treatment system design, development, and emission testing (2) integration of the engine and after-treatment system into multiple vehicle chassis, and 3) on-road demonstrations including chassis dynamometer testing. Development targets are (1) power and torque suitable for heavy-heavy duty Class 80 vehicles, (2) commercially viable, (3) certification to the CARB Optional NOx standard of 0.02 g/bhp-hr, and (ammonia emissions and fuel economy penalties as low as possible. Additionally, this contract will be modified in 2017 to add both the California Energy Commission's $2,000,000 and Clean Energy's $500,000 cost-share as pass-through funds.

Fueling Infrastructure and Deployment (NG/RNG)

16075: Purchase One Heavy-Duty CNG-Powered Truck

Contractor: City of Desert Hot Springs	SCAQMD Cost-Share	$ 38,000
	Cosponsor	
	AB 2766 Discretionary Fund Program/MSRC	25,000
Term: 03/11/16 – 03/10/20	Total Cost:	$ 63,000

Alternative fueled vehicles play an important role in Southern California's efforts to meet federally mandated fine particulate and ozone air quality standards. In July 2015 the Board approved co-funding of $38,000 with the MSRC to purchase a heavy-duty CNG-powered stakebed truck for the City of Desert Hot Springs that was originally awarded in 2009. In 2016 the City purchased and immediately deployed a 12-foot stakebed truck built on a Ford F450 chassis. The base gasoline engine is the spark-ignited

6.8L Ford Triton V-10. The vehicle was converted to dedicated CNG fuel with a heavy-duty CNG system manufactured and CARB certified by IMPCO. The vehicle is fitted with 31 GGE of on-board CNG storage. The F450 replaced an older gasoline powered Ford F150 Pickup truck. The total cost of the vehicle was $61,388.

16244: Renewable Natural Gas Production and Vehicle Demonstration Project

Contractor: CR&R, Inc.	SCAQMD Cost-Share	$ 900,000
	Cosponsors	
	CR&R, Inc.	46,080,000
	California Energy Commission	4,520,000
	CalRecycle	3,000,000
	AB 2766 Discretionary Fund Program/MSRC	500,000
Term: 09/03/16 – 03/02/20	Total Cost:	$ 55,000,000

Heavy-duty vehicles powered by conventional fossil fuels contribute significantly to local air pollution and contribute significantly to GHG emissions. The use of near-zero emission heavy-duty engine fueled with renewable natural gas can have a significant effect on addressing both of these air quality objectives. In October 2015 the Board approved $900,000 to support the expansion (Phase 2) of CR&R's anaerobic digestion and biomethane production facility in Perris, CA. Anaerobic digestion uses microorganisms to convert organic matter into useable and renewable natural gas (RNG), and into soil amendments that enhance plant growth and soil cultivation. The organic matter or feedstock for this facility is municipal solid waste, such as food and green waste that is collected in residential and commercial trash collection. The RNG produced at this facility will fuel CR&R's fleet of CNG-powered heavy-duty refuse collection vehicles, and the soil amendment produced at this facility will be used to grow plants and animal feed that will make its way back into the food and green waste cycle. This project will also demonstrate near-zero emission heavy-duty refuse collection vehicles powered by the Cummins-Westport 8.9L and 12L engines certified to CARB's Optional Low NOx Standard. These vehicles will be fueled with RNG produced at this facility. Finally, the RNG produced at this facility that is not used by CR&R will be introduced into the gas pipeline grid in cooperation with the Southern California Gas Company. Each phase of this facility is expected to generate 890,000 DGE of RNG annually.

16333: Implement Alternative Fuel Station Expansion

Contractor: Ontario CNG Station, Inc.	SCAQMD Cost-Share	$ 200,000
	Cosponsors	
	Ontario CNG Station, Inc.	448,535
	AB 2766 Discretionary Fund Program/MSRC	150,000
Term: 05/13/16 – 11/12/19	Total Cost:	$ 798,535

Alternative fueled vehicles play an important role in Southern California's efforts to meet federally mandated fine particulate and ozone air quality standards. In March 2016 the Board approved $200,000 to support the expansion of compressed natural gas (CNG) fueling at a public access, multi-fuel retail station positioned in a high vehicle volume area near the Interstate 10 freeway, the Ontario International Airport and Ontario Convention Center. OntarioCNG sells conventional gasoline and diesel fuels, biodiesel, and also hydrogen fuel. It has a car wash and a 24/7 manned convenience store with

restrooms. This project will increase CNG refueling capabilities and fuel delivery systems, with two high flow nozzles designed to reduce refueling time for heavy-duty Class 7-8 vehicles. The project will add one new 486 scfm CNG compressor, 36,000 scf of additional CNG fuel storage capacity, two new CNG dispensers and four fueling hoses, a second fueling island, and will introduce the marketing of RNG fuel. Overall, this project is expected to add greater visibility of alternative fuels to a conventional fuel consumer base as well as increase CNG fueling and the number of CNG fueled vehicles in this region.

17092: Construct RNG Production Facility and Demonstrate RNG with Next Generation Natural Gas Engine

Contractor: KORE Infrastructure, LLC	SCAQMD Cost-Share (*partially received as pass-through funds)*	$ 2,500,000
	Cosponsors	
	KORE Infrastructure, LLC & Partners	23,000,000
Term: 03/11/16 – 03/10/20	Total Cost:	$ 25,500,000

In order to increase supply of renewable natural gas (RNG), KORE Infrastructure is to construct a new full-scale modular biomethane production facility in Rialto, CA using a proprietary process developed and demonstrated over a six-year period at a local wastewater plant. The proposed facility will utilize a fully integrated system to process biosolids from wastewater treatment facilities into RNG that can be used locally as transportation fuel in the next generation natural gas engines that are certified to achieve 90 percent lower NOx emissions than the existing 2010 heavy-duty engine exhaust emissions standard. This project will utilize a thermochemical process to decompose the organic material into gases and a solid known as biochar. This thermochemical process is called pyrolysis and involves heating the almost dry organic materials to elevated temperatures in the absence of oxygen. The gases produced are primarily comprised of hydrogen, carbon monoxide, carbon dioxide, and methane. The components of this gas can then be reformed into other products including RNG. In September 2016 the Board approved $1 million dollars from the Clean Fuels Fund and $1.5 million from the BP ARCO Settlement Projects Fund (46). Kore's patented process consists of five stages: (1) material handling, (2) drying, (3) pyrolysis, (4) methanation (pyrolysis gas conversion to RNG), and (5) compression. The facility is expected to process nearly 300 tons per day of biosolids and produce about 1,000 GGE of transportation fuel grade RNG. The RNG production and dispensing facility is anticipated to be fully operational in 2018. KORE will initially convert up to two diesel trucks from their fleet to operate on the RNG produced at the new facility and work with local fleets to provide RNG for fleet vehicles equipped with low-NOx technology engines.

Direct Pay: 2015-16 Enhanced Fleet Modernization Program (EFMP) Plus-Up

Contractor: various	SCAQMD Cost-Share	$ 1,033,500
	Cosponsors	
	California Air Resources Board/Bureau of Automotive Repair	5,000,000
	MSRC/AB 2766 Discretionary Fund Program	1,550,250
	Special Revenue Fund/AB 923	516,750
Term: 01/08/16 – 01/08/16	Total Cost:	$ 8,100,500

The Enhanced Fleet Modernization Program is a state-funded program which is branded as the "Replace Your Ride" program in the SCAQMD. Through this pilot program, low- and moderate-income participants are offered incentives to replace their existing vehicles with cleaner, more fuel-efficient vehicles, or alternatively, to obtain vouchers for alternative transportation such as transit passes and ridesharing. Additional incentives are available to participants who live in disadvantaged communities and obtain advanced technology replacement vehicles such hybrids, PHEVs, and ZEVs. The program has been well received in the SCAQMD. Local match funds were provided in FY 2015-16 by the Clean Fuels Fund, MSRC, and the Special Revenue Fund, which support SCAQMD's high rate of program participation.

Direct Pay: Purchase of Electric Leaf Blowers and Trimmers for Lawn and Garden Demonstration Program

Contractor: Varies		$ 4,195
Term: 03/31/16 – 03/31/16	Total Cost:	$ 4,195

In 2014 SCAQMD launched a Commercial-Grade Electric Lawn and Garden Equipment Program to demonstrate commercial-grade electric lawn mowers and cordless electric hand-held lawn and garden equipment to promote and accelerate market penetration of such equipment in the South Coast Air Basin. The program was implemented with participating local gardening and landscape professionals as well as municipalities, universities and other eligible entities. The Program loans the equipment to participants on a rotating basis for 60-90 days and equipment contractors have been responsible for training users on safe and proper operation and maintenance of the equipment and providing necessary technical and logistical support. In 2016 additional equipment was purchased to continue the successful demonstration efforts.

Direct Pay: 2016-17 Enhanced Fleet Modernization Program (EFMP) Plus-Up

Contractor: various	SCAQMD Cost-Share	$ 1,503,000
	Cosponsors	
	California Air Resources Board	13,700,000
	MSRC/AB 2766 Discretionary Fund Program	2,254,500
	Special Revenue Fund/AB 923	751,500
Term: 09/02/16 – 09/02/16	Total Cost:	$18,209,000

Implementation of the Enhanced Fleet Modernization Program continues in FY 2016-17 with the support of local match funds from the Clean Fuels Fund, MSRC, and the Special Revenue Fund. The vast majority of funding has benefitted low-income participants who live in disadvantaged communities. Through this program, over 1,300 participants have scrapped their vehicles and replaced them with cleaner vehicles, primarily hybrids, PHEVs and BEVs.

Fuels/Emissions Studies

16198: Study of Opportunities and Benefits of Deploying Next Generation Heavy-Duty Natural Gas Vehicles Operating on Renewable Natural Gas

Contractor: Gladstein, Neandross & Associates, LLC	SCAQMD Cost-Share	$ 50,000

	Cosponsors	
	American Gas Association	50,000
	California Natural Gas Vehicle Partnership	50,000
	Clean Energy	50,000
	Southern California Gas Company	50,000
Term: 03/11/16 – 03/10/20	Total Cost:	$ 250,000

The next generation of cleaner ultra-low-NOx on-road heavy-duty combustion engines that achieve a 90 percent reduction in NOx emissions compared to the current emissions standard are currently being developed. These "near-zero" emission engines will play a significant role for the region to attain federal ambient air quality standards. Given the focus on climate change, the natural gas industry has been expanding its efforts to provide biomethane or renewable natural gas (RNG) to the transportation fuels market. As RNG use continues to increase, there is interest in further understanding the opportunities to introduce RNG as a transportation fuel and how RNG can be introduced into the natural gas pipeline. In November 2015 the Board approved a cost share of $50,000 to conduct a study on the opportunities and benefits of deploying next generation heavy-duty natural gas vehicles fueled by RNG. The resulting technical whitepaper, titled "Gamechanger – Next Generation Heavy-Duty Natural Gas Engines Fueled by Renewable Natural Gas", considered criteria pollutant and greenhouse gas benefits of ultra-low-NOx natural gas engines, the opportunities and cost to deploy such engines, and an evaluation of the market successes of RNG, future opportunities and challenges of increasing the use of RNG as a transportation fuel, and expanding the commercial deployment of ultra-low NOx heavy-duty vehicles locally, and regionally.

16254: Evaluate Ozone and Secondary Aerosol Formation from Diesel Fuels

Contractor: University of California Berkeley	SCAQMD Cost-Share	$ 106,361
Term: 10/25/16 – 08/31/17	Total Cost:	$ 106,361

Diesel vehicle exhaust and unburned diesel fuel are major sources of intermediate volatile organic compounds (IVOCs) and may contribute to the formation of urban ozone and secondary organic aerosol (SOA), which is an important component of particulate matter 2.5 (PM2.5). The characterization of IVOC emissions is critical in assessing ozone and SOA precursor production rates. Traditionally, laboratory measurements of IVOCs have been prohibitively difficult. For this project, novel experimental measurements and emissions modeling of typical diesel blends under varying temperatures and wind speeds will be used to determine potential ozone and SOA yields in urban areas.

17060: Bailment Agreement for Equipment Use for In-Use Emissions Testing of Heavy-Duty Inspection and Maintenance Program

Contractor: University of California Riverside	SCAQMD Cost-Share	$ 0
Term: 10/13/16 – 10/12/18	Total Cost:	$ 0

The University of California, Riverside's Bourn's College of Engineering – Center for Environmental Research and Technology (UCR/CE-CERT) is currently initiating a program entitled "Heavy-Duty On-Road Vehicle Inspection and Maintenance (I/M) Program" that is being funded by the California Air Resources Board. This program is to provide important information that will be utilized in the enhancement of CARB's Heavy-Duty I/M program. It is expected that any updates to CARB's Heavy-Duty I/M program would be implemented throughout the state and would become a critical part of emission reduction strategies in future Air Quality Management Plans for the SCAQMD. An important element of this CARB study will be an extensive emissions evaluation of over 50 heavy-duty trucks before and after repairs. The CARB program covers the costs associated with the chassis dynamometer testing and repairs, but does not incorporate budget for the necessary emissions analyzers. This in-kind contribution from the SCAQMD would be a critical element in the success of this specific project. In exchange for the loan of the emissions analyzers for approximately a two-year period, UCR/CE-CERT will provide emissions analysis information that will be used to help the SCAQMD achieve its goals in improved air quality.

Technology Assessment/Transfer and Outreach

08210: Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities

Contractor: Sawyer Associates	SCAQMD Cost-Share	$ 10,000
Term: 02/22/08 – 02/28/18	Total Cost:	$ 10,000

The Office of Science and Technology Advancement (STA) augments in-house expertise with consultants who perform through level-of-effort technical assistance contracts. Under this contract executed in 2008, Dr. Robert F. Sawyer provides technical assistance to further develop and refine the mobile source control measures. In addition, he provides assistance in air toxics control measures, review of SCAQMD programs such as the Clean Fuels projects, input to greenhouse gas and energy diversity policies, and state regulatory activities, such as the ZEV and ZBus regulations. Dr. Sawyer is the former Chairman of the California Air Resources Board and has over 50 years of domestic and international experience specializing in automotive emissions, alternative fuels, air pollution and environmental issues. He has additional experience in air pollution regulatory policy advising. Dr. Sawyer is a Professor of the Graduate School and the Class of 1935 Professor of Energy Emeritus at the University of California at Berkeley and a Visiting Professor of Energy and Environment at University College London. Dr. Sawyer serves on the Clean Fuels Advisory Committee.

17037: Technical Assistance with Alternative Fuels, Electric Vehicles, Charging and Fueling Infrastructure and Renewable Energy

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share	$ 50,000
Term: 11/18/16 – 11/17/18	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 as well as outreach activities to promote, assess, expedite and deploy the development and demonstration of advanced, low and zero emissions mobile and stationary technologies. This contract is for technical and administrative support to enable the range of activities involved in implementing the Clean Fuels Program and associated complimentary programs as needed.

17097: Technical Assistance with Alternative Fuels and Fueling Infrastructure, Emissions Analysis and On-Road Sources

Contractor: Gladstein, Neandross & Associates LLC	SCAQMD Cost-Share	$ 100,000
Term: 11/04/16 – 11/03/18	Total Cost:	$ 100,000

This contract leverages staff resources with specialized outside expertise. Gladstein, Neandross & Associates LLC (GNA) has previously assisted SCAQMD with implementing a wide-array of incentive programs to deploy lower-emitting heavy-duty vehicles and advanced transportation technologies. Under this contract, GNA will provide technical expertise across a broad spectrum of emission reduction technologies, including alternative and renewable fuels and fueling infrastructure, emissions analysis and heavy-duty on-road sources on an-as-needed basis.

Direct Pay: Insurance for Alternative Fuel Vehicles in Technology Advancement Office's Fleet Demonstration Program

Contractor: Hartford/Alliant Insurance	SCAQMD Cost-Share	$ 31,414
Term: 01/01/16 – 12/31/16	Total Cost:	$ 31,414

In order to showcase and demonstrate advanced, low-emission technologies, the SCAQMD often leases and/or purchases clean alternative fuel vehicles to educate public and private organizations on the benefits of advanced technologies, as well as provide valuable in-use test data to the manufacturers. These vehicles are displayed at outreach events and conferences, used in Ride-and-Drive demonstrations, and are part of the SCAQMD carpool fleet. Private insurance is obtained for these advanced technology vehicles to ensure proper coverage.

Transfer: Participation in California Natural Gas Vehicle Partnership for Fiscal Year 2016-17 and 2017-18

Contractor: Transfer from Clean Fuels	SCAQMD Cost-Share	$ 25,000
	Cosponsors	
	CNGVP Participating Members	130,000
Term: 07/08/16 – 07/08/16	Total Cost:	$ 155,000

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 2016 the SCAQMD approved $25,000 for the SCAQMD's participation in the Steering Committee for the next two years.

Direct Pay: Participation for CY 2016 Membership in Transportation Research Board

Contractor: Transportation Research Board	SCAQMD Cost-Share	$ 32,500
	Cosponsors	
	Core Program Participating Members	191,000
Term: 07/01/16 – 12/31/16	Total Cost	$ 223,500

In 2016 the SCAQMD supported the Transportation Research Board (TRB) by participating as a member. 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. 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 24 Conferences, Workshops & Events plus 4 Memberships

Contractor: Various	SCAQMD Cost-Share	$ 282,658
	Cosponsors	
	Various	4,017,865
Term: 01/01/16 – 12/31/16	Total Cost	$ 4,300,523

The SCAQMD regularly participates in and hosts or cosponsors conferences, workshops and events. These funds provide support for the 24 conferences, workshops and events sponsored throughout 2016 as follows: Calstart's Clean Low Carbon Fuels Summit in February; Linn-Benton Community College's Green Transportation Summit & Expo in February; UC Riverside's Solar Conference in February; UC Riverside's 2016 PEMS Conference in March; UCI's 2016 ICEPAG/MGS Conference in March; Coordinating Research Council's 2016 Real World Emissions Workshop in March; U.S. EPA's West Coast Collaborative Meeting in April; California Science Fair in May; GNA's 2016 ACT Expo in May; CleanTechOC's Advanced Transportation Symposium in June; GNA's 2016 Rethink Methane Symposium in June; 2016 Women in Green Forum in August; 2016 FuturePorts Annual Conference in June; SCCAA's LA Environmental Forum in August; JPL's 2016 Climate Day in September; Clean Fuels Advisory Group Retreats in January & September 2016; Adopt-A-Charger's 2016 National Drive Electric Week Event in September; Platia Productions' 2016 Santa Monica AltCar Expo & Conference in September; GNA's Ultra-Low NOx Heavy-Duty Engines Workshop in October; BRC's 2016 Southern California Energy Water + Green Living Summit in October; Energy Vision's Renewable Natural Gas for California Workshop in October; CalETC's 2016

Los Angeles Auto Show Events in November; CHBC's Hydrogen & Fuel Cells in the Ports Workshop in November; as well as GNA's upcoming 2017 Rethink Methane Symposium. Additionally, for 2016 four memberships were renewed for participation in the PEV Collaborative, the Fuel Cell & Hydrogen Energy Association, the California Hydrogen Business Council, and the Air & Waste Management Association.

PROGRESS AND RESULTS IN 2016

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 cofunded 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) development, integration and demonstration of ultra-low emission natural gas natural gas engines for on-road heavy-duty engines; 2) Develop and Demonstrate Plug-In Hybrid Electric Drive System for Medium- and Heavy-Duty Vehicles; and 3) Operation & Maintenance of City of Burbank Hydrogen Fueling Station.

Table 6 (page 63) provides a list of 43 projects and contracts completed in 2016. 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.

Develop, Integrate and Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Engines

Heavy-duty on-road diesel vehicles are currently, and expected to remain, one of the largest contributors of NOx emissions, even as the legacy fleet of older vehicles are retired and replaced by vehicles meeting the 2010 emissions standards. Ultra-low NOx emission engines provide a path to significantly reduce NOx emissions from the heavy-duty vehicle source category and are the linchpin for achieving the federal ambient air quality standards in the future. SCAQMD staff has worked closely with the California Energy Commission, Southern California Gas Company, U.S. Department of Energy and others on developing a range of engine sizes (6-15 liter) that could be considered an ultra-low NOx emissions engine for heavy-duty vehicles, ranging from Class 4-8. Concurrently, CARB also adopted optional NOx emission standards, including 0.02 g/bhp-hr, to enable incentive funding for new vehicles equipped with certified ultra-low emission engines.

In late 2013, the Board awarded a contract to Cummins, Inc., to develop an ultra-low NOx emission 15-liter natural gas engine. The project included emission targets of 0.02 g/bhp-hr NOx, other 2010 criteria pollutant standards, and 10 ppm ammonia or as low as possible using EPA and CARB certification test procedures. In addition, other objectives affecting commercial viability of the engine included minimal energy efficiency loss compared to diesel and providing power, life cycle cost, performance, drive quality, and durability similar to diesel.

The project was completed in June 2016. The engine was derived from the Cummins 14.9-liter ISX15 diesel engine but had newly designed manifolds, heads, camshaft, piston, EGR, turbocharger and catalyst aftertreatment all specifically designed for optimal performance with natural gas. The final technology configuration consisted of:



Figure 35: ISX15-G Ultra Low NOx Test Engine

- Stoichiometric air-fuel ratio
- Port fuel injection
- Big intake - small exhaust valves
- Improved cooling of head and spark plugs
- Flow-optimized intake manifold
- Flow-optimized exhaust manifold
- High energy ignition system
- Cooled EGR
- Waste-gate turbocharger
- Close-coupled and main underbody three-way catalyst system

An engine containing the final internal and external engine hardware, optimized control software, and after treatment system was tested according to the cold/hot Heavy Duty Engine Federal Test Procedure (HD-FTP) and was operated without failure for more than 500 hours under a wide range of speed and load conditions. The engine and aftertreatment system achieved the near-zero emission targets, fuel consumption lower than current natural gas engines; and incorporated design changes to improve engine robustness and driving performance, particularly during transient operation, and reduce maintenance cost. Ammonia emissions, although not achieving the target, were substantially lower than current production natural gas engines. Further optimization of software controls and the aftertreatment system is expected to reduce ammonia below 20 ppm.

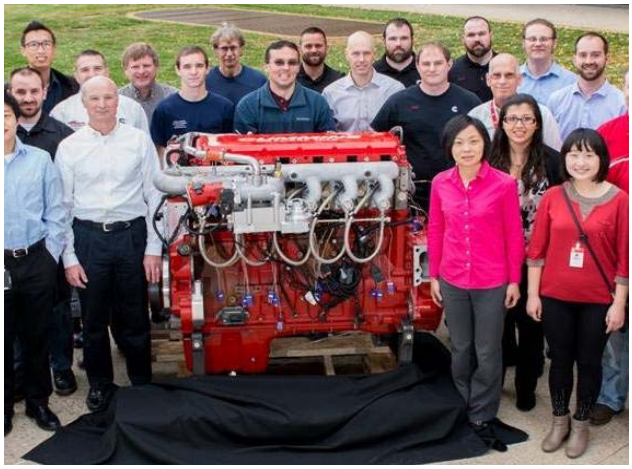


Figure 36: ISX15-G Ultra Low NOx Prototype Engine

Table 5: Emissions Testing Results

Parameter	Target	ISX15-G
NOx	0.02	0.003
PM	0.01	0.004
NMHC	0.14	0.010
CO	15.5	1.85
Ammonia	10 ppm	58 ppm
BTE loss*	minimal	1%

*Brake Thermal Efficiency Loss vs Diesel

This project demonstrated that a well-designed natural gas engine can achieve both ultra-low NOx emissions as well as thermal efficiency and performance equivalent to diesel engines. The project also

provided a design pathway for developing other ultra-low NOx natural gas engines with performance similar to a diesel engine which is described in the final report and two technical papers. Unfortunately, market demand for a 15-liter natural gas engine is currently insufficient to justify launching this new engine at this time. The technology is scalable over an 8- to 15-liter size range, and Cummins intends to incorporate this technology in the next natural gas engine which is expected to be released in the 2019-2020 timeframe.

In 2015, the 8.9L Cummins Westport was also certified to a 0.02 g/bhp-hr NOx standard and has since been fully commercialized, with ongoing efforts to develop, certify and commercialize the 6.7L and 11.9L natural gas engines. Furthermore, CARB and SCAQMD are collectively working on parallel efforts to develop liquid-fueled, large displacement engines suitable for long-haul operations that can also meet the 0.02 g/bhp-hr for NOx.

Based on the success of the engine development efforts, the SCAQMD, along with CARB and numerous other states, petitioned the U.S. EPA to establish a national near-zero NOx heavy-duty engine standard. In November 2016, CARB initiated the California heavy-duty emission standard rule development effort, and subsequently, in December 2016, U.S. EPA informed the petitioners of their goal to evaluate and consider the national heavy-duty engine standard. If the federal or state standard is revised, a market for the 15-liter engine developed under this contract is expected to develop.

Develop and Demonstrate Plug-In Hybrid Electric Drive System for Medium- and Heavy-Duty Vehicles

The Odyne Systems' hybrids are in Class 6 to Class 8 trucks. These are parallel plug-in hybrid vehicles and can improve fuel economy by up to 50% and reduce emissions. The Odyne hybrids come equipped with 6 or 12 kW of export power. The hybrid system adapts to the traction and the aerial hydraulics of the vehicle. The Odyne equipped trucks were designed, developed, validated and produced within this SCAQMD program and a DOE ARRA funded program. Odyne now has the capability to produce more of these vehicles. Cost analysis has been done to understand future cost reduction.

The Odyne hybrid system is a simple, parallel hybrid system that allows the torque of the electric motor to augment the torque output of the diesel engine, thus saving fuel. The motor speed is synchronized with the engine speed through the power take-off (PTO) unit. The traction motor drives the PTO, adding torque to the rear axle, or converts torque from the PTO into power to charge the hybrid batteries. Six patents have been granted, and other patents are pending.

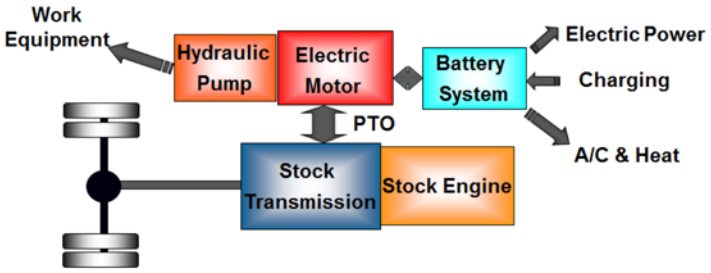


Figure 37: Odyne Plug In Hybrid System

The motor can also drive the hydraulic pump that controls the aerial device. A clutch in the PTO allows the motor to drive the hydraulic pump for the aerial device. If the clutch is closed, the diesel engine torque drives the pump and concurrently charges the hybrid batteries through the traction motor.

The advantages of the electrically driven hydraulic pump are reduction in sound level at the job site, improved fuel consumption, and reduced emissions. The diesel engine need not idle during the hydraulic pump control. The pump is activated only when the operator provides the control to move the hydraulics. This feature saves energy when the aerial device is being used.

Operation & Maintenance of City of Burbank Hydrogen Fueling Station



Figure 38: Odyne Utility Bucket Truck

Steam methane reformation (SMR) is currently used to produce the majority of hydrogen in California, typically from a large central plant that primarily produces hydrogen for petroleum refining and other industrial uses, but a portion of which can be further purified and transported to light-duty hydrogen fueling stations. Onsite reformers can eliminate hydrogen transportation (reducing emissions), but smaller onsite reformers are not as cost-effective. This onsite reformer station was built in 2009 by British Petroleum, with funding and support provided by U.S. DOE and General Motors, following the completion of the original electrolysis-based hydrogen fueling station, which was part of the Five Cities Hydrogen Demonstration Program.

In 2010, in order to support the continued and growing need for hydrogen fueling in the region, U. S. DOE, CARB, CEC, and SCAQMD contracted with Hydrogen Frontier, Inc. to repair equipment, restart, operate and maintain this hydrogen fueling station, train staff in use of equipment and procedures, and provide detailed vehicle fueling reports to NREL. SCAQMD added funds to continue operation and maintenance and pay for the increase in utility services (electricity and natural gas) for the onsite reformer and station.

Flexible fueling protocols satisfied a variety of automaker needs during development and demonstration of new fuel cell vehicles, but now, the need for longer range and fast refueling under a wide range of ambient conditions has resulted in a new standardized protocol. As with other non-retail hydrogen stations operating during this time period, access was controlled by PIN codes issued to drivers that completed hydrogen safety training. The SMR has nearly 19,000 runtime hours and demonstrates that operation and maintenance of on-site reformation can be a reasonable-cost option. New stations are increasing monitoring of hydrogen quality to protect the operation of fuel cell vehicles.

With the continued support of the City of Burbank, this location near the intersection of two major freeways remains desirable and has proven a viable asset to the infrastructure network. However, most new light-duty hydrogen stations are being co-located at gasoline stations in a retail environment. Continued operation and maintenance of hydrogen fueling at this site helped bridge the gap in preparation for additional upgrades commencing in 2017 to provide retail sale of hydrogen for light-duty vehicles using funding from a grant award under the CEC AB 118 Program.



Figure 39: Burbank Hydrogen Station

Table 6: Projects Completed between January 1 & December 31, 2016

Contract	Contractor	Project Title	Date
Hydrogen and Mobile Fuel Cell Technologies and Infrastructure			
11150	Hydrogen Frontier Inc.	Operation and Maintenance of City of Burbank Hydrogen Fueling Station	Jan-2016
16151†	Toyota Motor Sales USA	No Cost Loan of 2015 Toyota Mirai Fuel Cell Vehicle	Jan-2016
17030	Bevilacqua-Knight, Inc.	Participate in California Fuel Cell Partnership for Calendar Year 2016 and Provide Support for Regional Coordinator	Dec-2016
Electric/Hybrid Technologies and Infrastructure			
10659	Electric Power Research Institute	Data Collection to Further Evaluate Performance and Operational Benefits to Optimize Fleet of Medium-Duty Plug-In Hybrid Vehicles	Sep-2016
11606	Odyne Systems, LLC	Develop and Demonstrate Plug-In Hybrid Electric Drive System for Medium- and Heavy-Duty Vehicles	Nov-2016
11615	Parker Hannifin	Develop and Demonstrate Heavy-Duty Hydraulic Hybrid Vehicles	Aug-2016
13404†	Penske Honda of Ontario	Lease Two Honda Fit Electric Vehicles for Three Years	May 2016
13410†	Selman Chevrolet Company	Lease Three 2013 Chevrolet Volt Extended-Range Electric Vehicles for Three Years Then Purchase Vehicles	Apr-2016
13429†	Longo Toyota	Lease One Toyota RAV4 Electric Vehicle for Three Years Then Purchase Vehicle	Apr-2016
14202	Adopt-A-Charger	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	Apr-2016
14204	Associated of Los Angeles	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	Apr-2016
14336	Los Angeles Department of Water & Power	Install and Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project)	Apr-2016
15021	Transportation Power, Inc. (TransPower)	Upgrade and Demonstrate Two Electric Yard Tractors	Dec-2016
17058†	Adopt-A-Charger	Cosponsor the Los Angeles National Drive Electric Week 2016	Sep-2016
Engine Systems			
14364	Cummins, Inc.	Develop, Integrate and Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	Aug-2016

Table 6: Projects Completed between January 1 & December 31, 2016

Contract	Contractor	Project Title	Date
Fueling Infrastructure and Deployment (NG/RNG)			
05250	Downs Commercial Fueling, Inc.	Purchase & Install New L/CNG Fueling System at Commercial Fueling Station in Temecula	Apr-2016
06042	UCLA Fleet & Transit Services	Upgrade Existing CNG Public Access Station with Dispenser and Card Reader	Dec-2016
06084	Clean Energy	Upgrade Existing LNG Facility to L/CNG at Riverside County Waste Management Department's Aqua Mansa Facility	Feb-2016
06091	City of Whittier	Purchase and Install New Public Access CNG Fueling Station at City Yard	Dec-2016
07153	Foothill Transit	Purchase and Install New Public Access CNG Fueling Station in Irwindale	Jun-2016
07320	Orange County Transportation Authority	Install New CNG Refueling Station in the City of Santa Ana	Mar-2016
08043	University of California Los Angeles	Public Access CNG Fueling Station Upgrade for UCLA Transportation	Dec-2016
08044	Beaumont Unified School District	Install Limited Access CNG Refueling Station	Dec-2016
09218	Rim of the World Unified School District	Install Mountain Safety Equipment on CNG School Buses	Dec-2016
10067	Rim of the World Unified School District	Install Mountain Safety Equipment on CNG School Buses	Dec-2016
11548†	Clean Energy (novated from Mansfield Gas Equipment Systems)	Buydown Incentive Program for CNG Home Refueling Appliance "Phill"	Jan-2016
13401	Nite-Hawk Sweepers LLC	Demonstrate Natural Gas-Powered Parking Lot Sweepers	May-2016
Fuels/Emissions Studies			
13402	University of California Davis	Cost-Share Next Sustainable Transportation Energy Pathways (STEPs) Program	Jul-2016
Stationary Clean Fuel Technologies			
10723	Eastern Municipal Water District	Retrofit Digester as Engine with NOxTech Aftertreatment Emission Control Technology	Mar-2016
Health Impacts Studies			
12208	University of California Riverside/CE-CERT	Determine the Physical and Chemical Composition and Associated Health Effects of Tailpipe PM Emissions	Jan-2016
12865	University of California Los Angeles	Develop Quantitative Cellular Assays to Understand the Chemical Basis of Air Pollutant Toxicity	Jul-2016
14172	University of California Irvine	Study of Oxidative Stress in Relation to Particulate Air Pollution Exposures in Elderly	Aug-2016

Table 6: Projects Completed between January 1 & December 31, 2016

Contract	Contractor	Project Title	Date
Technology Assessment/Transfer and Outreach			
00069†	Walsh Consulting	Technical Assistance Relating to the Use of Alternative Fuels in Mobile Sources	Feb-2016
07062†	The Tioga Group, Inc.	Technical Assistance Related to Air Quality Impacts of Regional Goods	Nov-2016
12380†	The Tioga Group, Inc.	Technical Assistance Related to Emissions, Advanced Technologies and Goods Movement	Apr-2016
13198†	Gladstein, Neandross & Associates LLC	Technical Assistance with Alternative fuels, Emissions Analysis and On-Road Sources	Dec-2016
15344†	Clean Fuel Connection, Inc.	Technical Assistance with Alternative Fuels, Electric Vehicles, Charging and Fueling Infrastructure and Renewable Energy	Sep-2016
15415†	Gladstein, Neandross & Associates LLC	Technical Assistance with Alternative Fuels and Fueling Infrastructure, Emissions Analysis and On-Road Sources	Nov-2016
16055†	University of California Irvine	Cosponsor Solar Decathlon to Develop and Demonstrate Solar-Powered House at 2016	Feb-2016
16263†	Gladstein, Neandross & Associates LLC	Cosponsor ACT Expo 2016	Sep-2016
16388†	CleanTech OC	Cosponsor the 2016 Advanced Transportation Symposium & Expo	Aug-2016
17062†	Burke Rix Communications	Cosponsor the Southern California Energy Water & Green Living 2016 Summit	Dec-2016
17088†	Energy Vision	Cosponsor the Power of Waste: Renewable Natural Gas (RNG) for California Workshop	Dec-2016

†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.

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CLEAN FUELS PROGRAM
2017 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 document is for the upcoming calendar year 2017.

Overall Strategy

The overall strategy of the SCAQMD's Clean Fuels Program is based primarily on technology needs identified through the AQMP process and the SCAQMD Governing Board's directives to protect the health of residents in Southern California, which encompasses approximately 17 million people (nearly half the population of California). The AQMP is the long-term "blueprint" that defines:

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

The emission control needs and measures identified in the Draft 2016 AQMP projects that an approximate 43 percent reduction in NOx is required by 2023 and a 55 percent reduction by 2031, the majority of which must come from mobile sources. Notably, 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). Ground level ozone (a key component of smog) is created by a chemical reaction between NOx and VOCs emissions. This is especially noteworthy because in the South Coast Air Basin the largest contributor to ozone is NOx emissions, and mobile sources (on- and off-road as well as aircraft and ships) contribute to approximately 88 percent of the NOx emissions in this region. Furthermore, NOx and VOC emissions also lead to the formation of PM2.5, particulate matter measuring 2.5 microns or less in size, expressed as micrograms per cubic meter ($\mu g/m^3$).

The Draft 2016 AQMP includes integrated strategies and measures to demonstrate attainment of the following National Ambient Air Quality Standards (NAAQS):

- 8-hour Ozone (75 parts per billion or ppb) by 2031
- Annual PM2.5 (12 $\mu g/m^3$) by 2025
- 24-hour PM2.5 (35 $\mu g/m^3$) by 2019
- 8-hour Ozone (80 ppb) by 2023 (updated from the 2012 AQMP)
- 1-hour Ozone (120 ppb) by 2022 (updated from the 2012 AQMP)

The Draft 2016 AQMP also takes an initial look at the emission reductions needed to meet the new federal 8-hour ozone air quality standard of 70 ppb and projects that an additional 25 tpd in NOx reductions between 2031 and 2037 will be needed for attainment by 2037.

The daunting challenge to reduce NOx and PM2.5 to meet increasingly stringent standards require the Clean Fuels Program to encourage and accelerate advancement of clean fuel and transportation technologies, leading the way to commercialization of progressively lower-emitting fuels and vehicles. The NOx and VOC emission sources of greatest concern to this region are heavy-duty on-road and off-road vehicles. To underscore this concern, the 2015 Vehicle Technologies Market Report[4], summarizing national data, released in spring 2016 by the Oak Ridge National Laboratory for the Department of Energy, and corroborated by EMFAC 2014 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[5] truck sales have increased 45% from 2011 to 2015; and Class 4-7 trucks, 49%. Given the relationship between NOx, ozone and PM2.5, the 2017 Plan Update must continue to emphasize emission reductions in all these areas.

Since development of the 2012 AQMP, it became clear that the effect of moving 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 in the communities along the major goods movement corridors. The findings from the MATES IV[6], 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. In recognition of these impacts, the SCAQMD added as a key element to its strategy 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.

For over 28 years, a key strategy of the Clean Fuels Program has been its public-private partnership 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 $3-$4 of spending on R&D projects to every $1 of SCAQMD funds. While the SCAQMD thus aggressively seeks leverage funds to accomplish more with every dollar, it also strives to act as a leader in technology development and commercialization to accelerate the reduction of criteria pollutants.

As the state and federal governments have been turning much of their attention to climate change (CO2 reductions), the SCAQMD remains committed to developing, demonstrating and commercializing zero and near-zero emission technologies. Fortunately the majority of technologies that address our need for NOx reductions also enable greenhouse gas (GHG) reductions. Because of these "co-benefits," we have successfully pursued partnering with the state and federally-funded projects that promise emission reductions.

Program and Funding Scope

This 2017 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

[4] http://cta.ornl.gov/vtmarketreport/pdf/2015_vtmarketreport_full_doc.pdf

[5] 33,001 pounds and greater (Class 4-7 trucks, 14,001-33,000 pounds)

[6] http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv

measures identified in the Draft 2016 AQMP to address the increasing challenges this region is facing to meet air quality standards, including:

1) implementation of new and changing federal requirements, such as the federal 8-hour ozone standard of 70 ppb promulgated by U.S. EPA in late 2015;
2) implementation of new technology measures by including accelerated development of technologies getting ready for commercialization and deploying ready technologies; and
3) continued development of cost-effective approaches.

The overall scope of projects in the 2017 Plan Update also needs to remain sufficiently flexible to address new challenges and measures that are identified in the Draft 2016 AQMP, consider dynamically evolving technologies, and take into account new research and data. The latter, for example, includes the findings from the MATES IV study, which was undertaken to update the emissions inventory of toxic air contaminants, measure the concentration of ultrafine particles and black carbon (an indicator of diesel particulate emissions), and conduct a regional modeling effort to characterize risk to health across the Basin.

The Clean Air Act, in addition to providing for specific control measures based on known technologies and control methods, has provisions for more general measures based on future, yet-to-be-developed technologies. These "black box" measures are identified under Section 182(e)(5) of the Clean Air Act for regions that are extreme non-attainment areas, such as the South Coast Basin. In the past, some of the technologies that have been developed and demonstrated in the Clean Fuels Program may have served as guidance for the "black box." However, the Draft 2016 AQMP calls for elimination on the reliance of these "black box" (future technologies) to the maximum extent possible. In fact, the Draft 2016 AQMP for the first time envisions Southern California achieving attainment without a reliance on "black box" technology. This is due in large part to the progress in the development and commercialization of zero and near-zero technologies, albeit with pathways that still require more specificity and in part because of the emission reduction co-benefits from carbon dioxide (CO2) reductions expected from pursuit of climate change goals. There are significant challenges to getting there, however, including EPA moving forward with changing the heavy-duty engine exhaust NOx standard from 0.2 grams per break horsepower-hour (g/bhp-hr) to 0.02 g/bhp-hr as well as identifying financial incentives to offset the cost of cleaner technologies.

Within the core technology areas defined later in this section, project objectives range from near-term to long-term. However, the SCAQMD Clean Fuels Program concentrates on supporting development, demonstration and technology commercialization and deployment efforts rather than fundamental research. The nature and typical time-to-product for the Program's projects is described below, from near-term to longer-term.

- *Deployment* or technology commercialization efforts focus on increasing the utilization of clean technologies in conventional applications, promising immediate and growing emissions reduction benefits. However, 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.
- Technologies ready to begin field *demonstration* in 2017, are expected to result in a commercial product in the 2018-2019 timeframe, and 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.

- Finally, successful technology *development* projects are expected to begin during 2017 with durations of at least two years. Additionally, field demonstrations to gain longer-term verification of performance may also be needed prior to commercialization. Certification and ultimate commercialization would be expected to follow. Thus, development projects identified in this plan may result in technologies ready for commercial introduction as soon as 2020-2021. 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 2021 or later.

Core Technologies

The following technologies have been identified as having the largest potential and best prospects to enable the emission reductions need to achieve NAAQS and thus form the core of the Program.

Not all project categories will be funded due to funding limitations, and focus will remain on control measures identified in the 2016, with consideration for 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, in January 2016, the SCAQMD was awarded $23.5 million from CARB's Low Carbon Transportation Greenhouse Gas Emission Reduction Fund for heavy-duty truck projects. Finally, several of the core technologies discussed below are synergistic. For example, a heavy-duty vehicle such as a transit bus or drayage truck, may utilize an electric drive train with a fuel cell operating on hydrogen fuel or an internal combustion engine operating on natural gas or another alternative fuel as a range extender.

These priorities may shift during the year in keeping with the diverse and flexible "technology portfolio" approach. Changes in priority may occur to leverage opportunities such as cost-sharing by the state government, the federal government, or other entities. Priorities may also shift to address specific technology issues which affect residents within the SCAQMD's jurisdiction.

The following nine core technology areas are listed by current SCAQMD priorities based on the goals for 2017.

Electric/Hybrid Technologies & Infrastructure

Growing awareness of the need for better air quality is leading to stricter emission targets for vehicles in the near future. If the region expects to meet the federal standards for PM2.5 and ozone, a primary focus must be on zero and near-zero emission technologies. A leading strategy to achieve these goals is the electrification of transportation technologies on a wide and large scale. With that in mind, the SCAQMD supports projects to address the main concerns regarding cost, battery lifetime, travel range, charging station infrastructure and original equipment manufacturer (OEM) commitment. Integrated transportation systems can encourage further reduction of emissions by matching the features of electric vehicles (zero emissions, zero start-up emissions, modest all electric range) to typical consumer demands for mobility by linking them to transit. Additionally, the impact of fast charging on battery life and infrastructure costs needs to be better understood. This is especially important today when every month roughly 10,000 new plug-in vehicles are sold or leased in the U.S., and this number may

increase significantly if the Chevy Bolt and Tesla Model 3 with anticipated 200+ mile ranges become widely available.

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 that 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) or with plug-in hybrid powertrains, 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. Additionally, just this past July, the California Sustainable Freight Action Plan was released, outlining a blueprint to transition the state's freight system to an environmentally cleaner, more efficient and more economical one than it is today, including a call for a zero and near-zero emissions vehicle pilot project in Southern California. The Port of Los Angeles's Sustainable City Plan corroborates this effort, setting a goal of 15 percent of zero emission goods movement trips by 2025 and 35 percent by 2035.

There are now over 19 light-duty plug-in hybrid (PHEVs) and pure battery electric vehicles (BEVs) commercially available. All of these vehicles offer the benefits of higher fuel economy and range, as well as lower emissions. Continued advancements in the light-duty arena may have applications for medium- and heavy-duty vehicles.

Opportunities to develop and demonstrate technologies that could enable expedited widespread use of electric and hybrid-electric vehicles in the Basin include the following:

- demonstration of electric and hybrid technologies for cargo container transport operations, e.g., heavy-duty battery electric or plug-in electric drayage trucks with all electric range;
- demonstration of medium-duty electric and hybrid electric vehicles in package delivery operations, e.g., electric walk-in vans with fuel cell or CNG range extender ;
- development and demonstration of CNG hybrid vehicle technology;
- demonstration of niche application battery electric vehicles, including school and transit buses and refuse trucks with short-distance fixed service routes;
- 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;
- development of eco-friendly intelligent transportation system (ITS) strategies, optimized load-balancing strategies for cargo freight and market analysis for zero emission heavy-duty trucks; 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).

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 light-duty fuel cell vehicles (FCVs) by supporting the required refueling infrastructure.

Calendar Years 2015-2018 are a critical timeframe for the introduction of hydrogen fueling infrastructure. In 2014, Hyundai introduced the Tuscon FCV for lease, in 2015, Toyota commercialized the first FCV available to consumers for purchase, and in December 2016, Honda started delivering its

2017 Honda Clarity Fuel Cell, and other OEMS have similarly disclosed plans to commercialize FCVs in 2017 and 2018. Since hydrogen refueling stations need 18-36 month lead times for permitting, construction and commissioning, plans for stations need to be implemented now. While coordination efforts with the Division of Measurement Standards to establish standardized measurements for hydrogen fueling started in 2014, additional efforts to offer hydrogen for sale to general consumers are still needed. In addition, SCAQMD continues to review the market to understand new business models and new sources of funding besides grants for construction necessary to enable the station operations to remain solvent during the early years until vehicle numbers ramp up. Lastly, a deliberate and coordinated effort is necessary to ensure that the retail hydrogen stations are developed with design flexibility to address specific location limitations, and with refueling reliability matching those of existing gasoline and diesel fueling stations.

Fuel cells can also play a role in medium- and heavy-duty applications where battery capacity is insufficient to meet range requirements. The CaFCP's Medium- and Heavy-Duty Fuel Cell Electric Truck Action Plan completed in October 2016 focuses on Class 4 parcel delivery trucks and Class 8 drayage trucks with infrastructure development and establishes metrics for measuring progress.

The 2017 Plan Update identifies key opportunities while clearly leading the way for pre-commercial demonstrations of OEM vehicles. Future projects may include the following:

- continued development and demonstration of distributed hydrogen production and fueling stations, including energy stations with electricity and hydrogen co-production and higher pressure (10,000 psi) hydrogen dispensing and scalable/higher throughput;
- 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;
- 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 as well as critical assessments of market risks to guide and protect this investment; and
- coordinate with fuel cell vehicle OEMs to develop an understanding of their progress in overcoming the barriers to economically competitive fuel cell vehicles and develop realistic scenarios for their large scale introduction.

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 that are 90% lower than the 2010 standards. This year the commercialization of the Cummins 8.9-liter natural gas engine achieving 90% below the existing federal standard was a game changer. By 2018, Cummins Westport, with SCAQMD and others as project partners, hopes to certify and commercialize a near-zero emission version of its existing 12-liter natural gas engine. The Draft 2017 Plan Update continues to incorporate pursuit of cleaner engines for the heavy-duty sector. Future projects will support the development, demonstration and certification of engines that can achieve these massive emission reductions using an optimized systems approach. Specifically, these projects are expected to target the following:

- development of ultra-low emission, natural gas engines for heavy-duty vehicles and high horsepower applications;
- continued development and demonstration of gaseous- and liquid-fueled, advanced fuels or alternantive 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 hydraulic plug-in hybrid vehicles;

- development and demonstration of engine systems that employ advanced engine design features,waste heat recovery, improved exhaust or recirculation systems, and aftertreatment devices; and
- Development of cold start technologies for hybrids and diesels where high level emissions occur

The National Highway Traffic Safety Administration's finalized standards to improve fuel efficiency of medium- and heavy-duty vehicles for model year 2018 and beyond should spur further interest by manufacturers to partner on engine system development. The EPA's recent initiation to create a rule for a national low NOx standard for all on highway heavy duty engines will require all manufacturers to participate by 2024

Fueling Infrastructure and Deployment (NG/RNG)

The importance of natural gas, renewable natural gas (RNG) 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 or more years ago as well as standardize fueling station design, especially to ensure growth of alternative fuels throughout the South Coast Air Basin and beyond, along with partial or complete transition to renewable natural gas delivered through the pipeline. 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. SB 350 (De León) further establishes a target to double the energy efficiency in electricity and natural gas end uses by 2030.

Active participation in the development of National Fire Protection Association (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 cofunded 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;
- enhancement of safety and emissions reduction from natural gas refueling equipment;
- expansion of fuel infrastructure, fueling stations, and equipment; and
- expansion of infrastructure connected with existing fleets, public transit, and transportation corridors, including demonstration and deployment of closed loop systems for dispensing and storage.

Health Impacts, Emissions and Fuel 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). In fact, 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 NOx 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 2015 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 addition, as the market share for gasoline direct injection (GDI) vehicles has rapidly increased from 4% of all vehicle sales in the U.S. in 2009 to 38% in 2014, with an expectation to top 60% by 2016, it is important to understand the impact on air quality from these vehicles. As such, SCAQMD has either funded or will be funding studies to investigate both physical and chemical composition of tailpipe emissions, focusing on PM from GDI vehicles.

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 considered commercializing Class 8 trucks using DME, and staff would like to ensure these trucks have lower NOx than the existing standard.

Some areas of focus include:

- demonstration of remote sensing technologies to target different high emission applications and sources;
- studies to identify the health risks associated with ultrafine 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 its associated impacts on criteria pollutants.

Stationary Clean Fuel Technologies

Although stationary source emissions are small compared to mobile sources in the South Coast Air Basin, there are applications where cleaner fuel technology can be applied to reduce NOx, VOC and PM emissions. For example, a recent demonstration project funded in part by the SCAQMD at a local sanitation district consisted of retrofitting an existing biogas engine with a digester gas cleanup system and catalytic exhaust emission control. The retrofit system resulted in significant reductions in NOx, VOC and CO emissions. This project demonstrated that cleaner, more robust renewable 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 possible option 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 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 NOx 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, dual fuel technologies and 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 introduction of natural gas into the engine or via 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 dual fuel engines and advanced aftertreatment technologies for mobile applications (including diesel particulate traps and selective catalytic reduction catalysts); and non thermal regen technology
- development and demonstration of low-VOC and PM lubricants for diesel and natural gas engines.

Technology Assessment/Transfer & Outreach

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 40 below presents the potential allocation of available funding, based on SCAQMD projected program costs of $16.5 million for all potential projects. The expected actual project expenditures for 2017 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 2017 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.

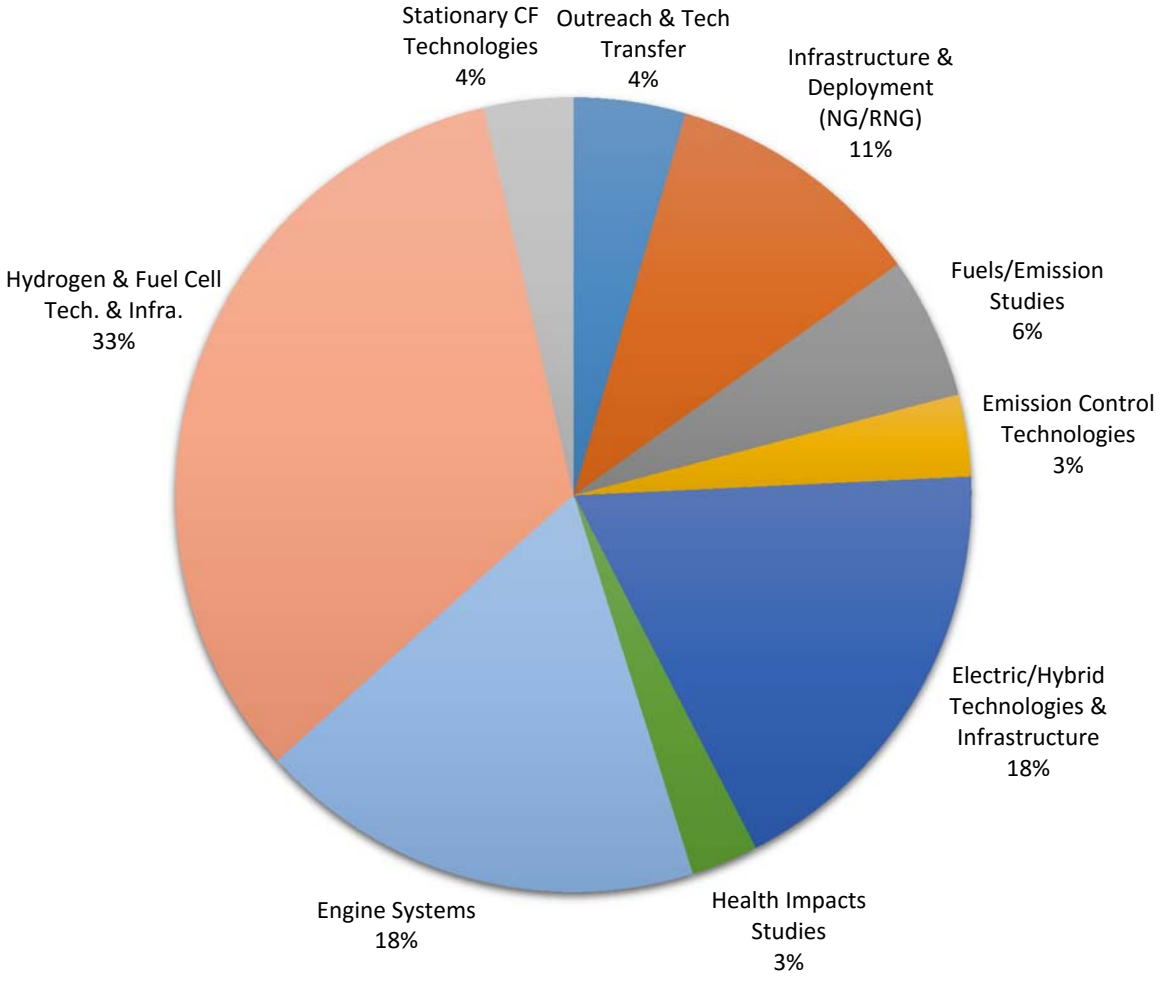


Figure 40: Projected Cost Distribution for Potential SCAQMD Projects in 2017 ($16.5M)

Program Plan Update for 2017

This section presents the Clean Fuels Program Plan Update for 2017. 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 7 (page 79) summarizes potential projects for 2017 as well as the distribution of SCAQMD costs in some areas as compared to 2016. The funding allocation continues the focus toward development and demonstration of zero and near-zero emission technologies including the infrastructure for such technologies. For the 2017 Plan, the SCAQMD shifts some emphasis onto hydrogen and fuel cell technologies to incentivize large-scale hydrogen infrastructure projects at the Ports and in the Inland Empire and in light of current and projected roll out of fuel cell vehicles in 2016-2017, with a small decrease in electric and hybrid-electric technologies in light of the large award the SCAQMD received in early January 2016 from the Greenhouse Gas Reduction Fund Program. A small funding shift to Engine Systems and Fueling Infrastructure and Deployment (natural gas and renewable fuels) is also recommended for biogas production and to ensure continued development and deployment of near-zero natural gas engines and liquid-fueled high horsepower engines for long-haul trucks. The other areas will continue with similar allocations for 2017. As in prior years, the funding allocations again align well with the SCAQMD's FY 2016-17 Goals and Priority Objectives. Overall, the Program is designed to ensure a broad portfolio of technologies and leverage state and federal efforts, and maximize opportunities to leverage technologies in a synergistic manner.

Staff has developed a project ranking approach that includes a simple "Consumer Reports" like format, based on feedback and direction from some Governing Board members and both advisory groups, mainly to further support the proposed fund allocations for the core technology areas. For each of the core technologies, staff considers numerous factors that influence the proposed allocation of funds, ranging from overall Environment & Health Benefits to Technology Maturity and Compatibility to and Cost, and these influences are considered for the proposed ranking system. Within each broad factor, staff has included sub-factors for each specific type of project that may be considered. This approach is included as Appendix D, which summarizes staff ranking of the potential projects anticipated in the Clean Fuels Fund Plan Update for 2017, and it is noted that technology developers, suppliers and other experts may differ in their approach to ranking these projects. This approach has been reviewed with the Clean Fuels and Technology Advancement Advisory Groups, as well as the Governing Board.

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 and identifies contractors to perform the projects, participating host sites, and securing sufficient cost-sharing needed to complete the project and other necessary factors. Recommendations to the SCAQMD Governing Board will include descriptions of the technology to be demonstrated and in what application, the proposed scope of work of the project and the capabilities of the selected contractor and project team, in addition to the expected costs and expected benefits of the projects as required by H&SC 40448.5.1.(a)(1). Based on communications with all of the organizations specified in H&SC 40448.5.1.(a)(2) and review of their programs, the projects proposed in this Plan do not appear to duplicate any past or present projects.

Funding Summary of Potential Projects

The remainder of this section contains the following information for each of the potential projects summarized in Table 7.

Proposed Project: A descriptive title and a designation for future reference.

Expected SCAQMD Cost: The estimated proposed SCAQMD cost share as required by H&SC 40448.5.1.(a)(1).

Expected Total Cost: The estimated total project cost including the SCAQMD cost share and the cost share of outside organizations expected to be required to complete the proposed project. This is an indication of how much SCAQMD public funds are leveraged through its cooperative efforts.

Description of Technology and Application: A brief summary of the proposed technology to be developed and demonstrated, including the expected vehicles, equipment, fuels, or processes that could benefit.

Potential Air Quality Benefits: A brief discussion of the expected benefits of the proposed project, including the expected contribution towards meeting the goals of the AQMP, as required by H&SC 40448.5.1.(a)(1). In general, the most important benefits of any technology research, development and demonstration program are not necessarily realized in the near-term. Demonstration projects are generally intended to be proof-of-concept for an advanced technology in a real-world application. While emission benefits, for example, will be achieved from the demonstration, the true benefits will be seen over a longer term, as a successfully demonstrated technology is eventually commercialized and implemented on a wide scale.

Table 7: Summary of Potential Projects for 2017

Proposed Project	Expected SCAQMD Cost $	Expected Total Cost $
Electric/Hybrid Technologies & Infrastructure		
Develop and Demonstrate Electric and Hybrid Vehicles	1,000,000	2,000,000
Develop and Demonstrate Infrastructure for Deployment of Plug-in Electric and Hybrid Electric Vehicles	700,000	3,000,000
Demonstrate Alternative Energy Storage	300,000	2,000,000
Develop and Demonstrate Electric Container Transport Technologies	1,000,000	4,000,000
Subtotal	$3,000,000	$11,000,000
Hydrogen and Fuel Cell Technologies and Infrastructure		
Develop and Demonstrate Operation and Maintenance Business Case Strategies for Hydrogen Stations	350,000	4,000,000
Develop and Demonstrate 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
Engine Systems		
Develop and Demonstrate Advanced Gaseous- and Liquid-Fueled Medium- and Heavy-Duty Engines and Vehicle Technologies to Achieve Ultra-Low Emissions	2,300,000	5,600,000
Develop and Demonstrate Alternative Fuel and Clean Conventional Fueled Light-Duty Vehicles	200,000	1,500,000
Develop and Demonstrate Cold-Start Technologies	250,000	1,000,000
Develop and Demonstrate Waste-Heat Recovery on Heavy-Duty Diesel Engines	250,000	1,000,000
Subtotal	$3,000,000	$9,100,000
Fueling Infrastructure and Deployment (NG/RNG)		
Deploy Natural Gas Vehicles in Various Applications	500,000	2,000,000
Develop, Maintain & Expand Natural Gas Infrastructure	250,000	1,500,000
Demonstrate Natural Gas Manufacturing and Distribution Technologies Including Renewables	1,000,000	10,000,000
Subtotal	$1,750,000	$13,500,000
Fuels/Emission Studies		
Conduct In-Use Emissions Studies for Advanced Technology Vehicle Demonstrations	300,000	800,000
Conduct Emissions Studies on Biofuels and Alternative Fuels	400,000	1,000,000

Table 7: Summary of Potential Projects for 2017 (cont'd)

Proposed Project	Expected SCAQMD Cost $	Expected Total Cost $
Fuels/Emission Studies (cont'd)		
Identify and Demonstrate In-Use Fleet Emissions Reduction Technologies & Opportunities	250,000	2,000,000
Subtotal	$950,000	$3,800,000
Stationary Clean Fuel Technologies		
Develop and Demonstrate Reliable, Advanced Emission Control Technologies, and Low Emission Monitoring Systems and Test Methods	150,000	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	$600,000	$2,250,000
Emission Control Technologies		
Develop and Demonstrate Advanced Aftertreatment Technologies	300,000	5,000,000
Demonstrate On-Road Technologies in Off-Road and Retrofit Applications	250,000	1,000,000
Subtotal	$550,000	$6,000,000
Health Impacts Studies		
Evaluate Ultrafine Particle Health Effects	150,000	2,000,000
Conduct Monitoring to Assess Environmental Impacts	150,000	500,000
Assess Sources and Health Impacts of Particulate Matter	150,000	300,000
Subtotal	$450,000	$2,800,000
Outreach and Technology Transfer		
Assess and Support Advanced Technologies and Disseminate Information	425,000	800,000
Support Implementation of Various Clean Fuels Vehicle Incentive Programs	325,000	400,000
Subtotal	$750,000	$1,200,000
TOTALS FOR POTENTIAL PROJECTS	**$16,500,000**	**$ 69,750,000**

Technical Summaries of Potential Projects

Electric/Hybrid Technologies & Infrastructure

Proposed Project: Develop and Demonstrate Electric and Alternative Fuel Transportation

Expected SCAQMD Cost: $700,000

Expected Total Cost: $2,000,000

Description of Technology and Application:

The significance of transportation in overall carbon emissions is increasing as energy utilities move toward cleaner and more sustainable ways to generate electricity. In the United States, the EPA estimated that in 2015, transportation was responsible for about 28% of the nation's carbon emissions, second only to power plants at 31%.

The global light-duty vehicle market is changing rapidly on behalf of government-led initiatives to improve fuel economy and market demand for alternative transportation options. These changes are being driven primarily by the adoption of vehicles with various levels of drivetrain electrification. 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. Long-range BEVs are now competitive in price among economy brands after subsidies and the affordable 200+ mile BEV will have a big impact on the vehicle market. Plug-in hybrids (PHEVs) are also making significant advances. Continued market expansion is likely to result from expanding OEM applications of the powertrain in new, larger vehicle body types.

Recently, automakers have commercialized fuel cell vehicles, with some concepts with plug-in charge capability. 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.

Medium- and heavy-trucks make up 4.3% of vehicles in the United States and drive 9.3% of all miles driven each year, yet are responsible for more than 25% of all the fuel burned annually. However, hybrid technologies have gained momentum in the light-duty sector with commercial offerings by most 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.

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.

The SCAQMD has investigated 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, especially from renewable sources, 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 retrofit technologies and related charging infrastructure will be considered.

This project category is to develop and demonstrate:

- various PEV architectures;
- anticipated costs for such architectures;
- customer interest and preferences for each alternative;
- integration of the technologies into prototype vehicles and fleets;
- evaluation of any new promising light-duty vehicle propulsion technologies or fuels; and
- electric and hybrid-electric medium- and heavy-duty vehicles (e.g., utility trucks, delivery vans, shuttle buses, transit buses, waste haulers, construction equipment, cranes and other off-road vehicles)

Potential Air Quality Benefits:

The Draft 2016 AQMP identifies zero or near-zero emitting vehicles as a key attainment strategy. Plug-in HEV technologies have the potential to achieve near-zero emissions while retaining the range capabilities of a conventionally gasoline-fueled combustion engine vehicle, a key factor expected to enhance broad consumer acceptance. Given the variety of PEV systems under development, it is critical to determine the true emissions and performance utility compared to conventional vehicles. Successful demonstration of optimized prototypes would promise to enhance the deployment of near-ZEV and ZEV technologies.

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 zero and near-zero emitting vehicles in the South Coast Basin, which is a high priority of the AQMP.

Proposed Project: Develop and Demonstrate Infrastructure for Deployment of Plug-in Electric and Hybrid Electric Vehicles

Expected SCAQMD Cost: $800,000

Expected Total Cost: $3,000,000

Description of Technology and Application:

There is a critical need to address gaps in EV charging infrastructure which has resulted in a deficiency of EV charging infrastructure availability. Almost half (47%) of the 561,022 EVs sold in the U.S. were in California, and of those sales in California, it is estimated that almost half (45%) were in Southern California or the greater Los Angeles region. In addition, the California ZEV Action Plan, which was updated in 2016, calls for 1.5 million ZEVs by 2025, calling for an increase of about 200,000 ZEVs annually between now and 2025.

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. Together with the growing adoption of long range EVs, the technology and infrastructure of three fast DC charging systems (SAE combo, CHAdeMO and Tesla) are developing as well. Technological developments improving the driving range of EVs, as well as increasing availability and speed of charging infrastructure, could change the need for charging infrastructure in the future. SCAQMD is committed to continuing to support the successful deployment of EV charging infrastructure.

The SCAQMD is actively pursuing development of intelligent transportation systems to improve traffic efficiency of electric and hybrid cargo container trucks. This system provides truck drivers real-time vehicle operation advice based on changing traffic and road conditions where trucks can dynamically change their speed to better flow through intersections. A truck eco-routing system can provide the most eco-friendly travel route based on truck engine/emission control characteristics, loaded weight, road grade and real-time traffic conditions. 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.

This project category is one of SCAQMD's continued efforts to:

- deploy a network of DC fast charging infrastructure and rapidly expand the existing network of public plug-in EV charging stations;
- develop intelligent transportation system strategies for cargo containers;
- develop freight load-balancing strategies as well as to conduct market analysis for zero emission heavy-duty trucks in goods movement; and
- support for local government outreach and charging installation permit streamlining.

Potential Air Quality Benefits:

The Draft 2016 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 reduce Particulate Matter (PM) pollution along major roadways through the expansion of the public plug-in EV charging infrastructure network by allowing drivers to shift away from petroleum-fueled vehicles to plug-in EVs. In addition, this project will assist in achieving improved fuel economy and lower tailpipe emissions, further helping the region to achieve federal ambient air quality standards and protect public health. 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 beyond lithium-ion batteries, flywheels, hydraulic systems and ultracapacitors. Energy storage systems optimized to combine the advantages of ultracapacitors and high-energy but low-power advanced batteries could yield further benefits. Beyond lithium-ion batteries (e.g., lithium-sulfur, lithium-oxygen, sodium-ion, flow, and solid-state batteries) also have opportunities to achieve higher energy density, longer cycle life, and cheaper cost.

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 project is to decrease fuel consumption and resulting emissions without any changes in performance compared to conventional vehicles. This effort 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 Draft 2016 AQMP. This project is expected to further efforts 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: $1,200,000

Expected Total Cost: $4,000,000

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. Recently, CARB awarded SCAQMD more than $23 million towards the development, demonstration and deployment of up to 43 trucks for goods movement, either with all electric operation or all electric range within disadvantaged communities. The total project cost is approximately $40 million, with the remainder funds cost-shared between five sister air quality agencies, OEMs and demonstration sites.

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 technical review 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 Draft 2016 AQMP proposes to reduce emissions from this activity by modernizing the fleet and retrofitting NOx 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.

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 in 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. In October 2016, the CaFCP released its Medium- and Heavy-Duty Fuel Cell Electric Truck Action Plan focusing on Class 4 parcel delivery trucks and Class 8 drayage trucks with infrastructure development and establishing metrics for measuring progress.

In 2015, Hyundai and Toyota commercialized fuel cell vehicles, with Honda initiating delivery in 2016 and others to follow soon.

Government actions over the last couple of years, coupled with early adopter response, is helping to establish demand and thus a business case model for hydrogen stations. Additional work in this project category includes developing 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, including optimizing designs with flexibility to address individual site characteristics, as well as ensuring higher levels of dispensing availability and reliability. Furthermore, in the next couple of years an evaluation of actual market penetration of FCVs should be conducted to guide and protect local and state investments in the hydrogen market.

Potential Air Quality Benefits:

The Draft 2016 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, electricity (stationary turbine technology, solar or 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 project, with significant additional funding from other governmental and private entities, will provide the hydrogen fueling infrastructure that is necessary in the South Coast Air Basin. The deployment of FCEVs and the development of the necessary fueling infrastructure will lead to substantial reductions in NO~~x~~, VOC, CO, PM and toxic air contaminants from vehicles.

Proposed Project: Develop and Demonstrate Distributed Hydrogen Production and Fueling Stations

Expected SCAQMD Cost: $2,000,000

Expected Total Cost: $6,000,000

Description of Technology and Application:

Alternative fuels, such as hydrogen and the use of advanced technologies, such as fuel cell vehicles, are necessary to meet future clean air standards. A key element in the widespread acceptance and resulting increased use of alternative fuel vehicles is the development of a reliable and robust 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 project 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 (e.g., biomass, digester gas).

Home Refueling Appliances: Home refueling/recharging is an attractive advancement for alternative clean fuels due to the limited conventional refueling infrastructure. 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 13,500 fuel cell vehicles will be deployed by 2019 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 and become more reliable in terms of availability. SCAQMD will seek additional funding from CEC and CARB to construct and operate hydrogen fueling stations.

Potential Air Quality Benefits:

The Draft 2016 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 project 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 NOx, 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 dominant 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, the DOE awarded SCAQMD funds to demonstrate Zero Emission Container Transport (ZECT) technologies. In 2015, the DOE awarded SCAQMD additional funds to develop and demonstrate additional fuel cell truck platforms and vehicles under ZECT II.

This category may include projects in the following applications:

On-Road:	Off-Road:
Transit Buses	Vehicle Auxiliary Power Units
Shuttle Buses	Construction Equipment
Medium- & Heavy-Duty Trucks	Lawn and Garden Equipment
	Cargo Handling Equipment

Potential Air Quality Benefits:

The Draft 2016 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, mainly through showcasing this 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.

Recently, Hyundai, Toyota and Honda have commercialized fuel cell vehicles in California, with Mercedes-Benz announcing a plug-in fuel cell model for 2018. Innovative strategies 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.

Potential Air Quality Benefits:

The Draft 2016 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.

Engine Systems

Proposed Project: Develop and Demonstrate Advanced Gaseous- and Liquid-Fueled Medium- and Heavy-Duty Engines and Vehicles

Expected SCAQMD Cost: $2,800,000

Expected Total Cost: $5,600,000

Description of Technology and Application:

The objective of this proposed project is to support development and certification of near commercial prototype low-emission medium- and heavy-duty gaseous- and liquid-fueled engine technologies and integration and demonstration of these technologies in on-road vehicles. The NOx emissions target for this project area is 0.02 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 advanced fuel system and engine design features, aggressive engine calibration and improved thermal management, improved exhaust gas recirculation systems, and aftertreatment devices that are optimized using a system approach. This effort is expected to result in several projects, including:

- Development and demonstration of advanced engines in medium- and heavy-duty vehicles and high horsepower applications;
- development of durable and reliable retrofit technologies to partially or fully convert engines and vehicles from petroleum fuels to alternative fuels; and
- anticipated fuels for these projects include but are not limited to alternative fuels (fossil fuel-based and renewable natural gas, propane, hydrogen blends, electric and hybrid), conventional and alternative diesel fuels, ultra-low sulfur diesel, emulsified diesel, dimethyl ether and gas-to-liquid fuels. The project 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 200-400 horsepower engines. Higher horsepower alternative fuel engines are beginning to be introduced. However, vehicle range, lack or limited accessible public infrastructure, 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 400 HP or more is limited. Continued development of cleaner dedicated alternative gaseous- or diesel-fueled engines over 400 HP would increase availability to end-users and provide additional emission reductions.

Potential Air Quality Benefits:

This project is intended to expedite the commercialization of low-emission gaseous- liquid-fueled medium- and 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 1,400 lb/yr of NOx. Clean neat or blended alternative fuels can also reduce heavy-duty engine particulate emissions by over 90 percent compared to current diesel technology. This project 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 project 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 conventionally 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;
- 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 Draft 2016 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 project is expected to lead to increased availability of low emission alternative-and conventional-fueled vehicles for fleets as well as consumer purchase.

Fueling Infrastructure and Deployment (NG/RNG)

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. It also seeks to deploy low-emission natural gas vehicles using renewable fuels to achieve further emission reductions.

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: $250,000

Expected Total Cost: $1,500,000

Description of Technology and Application:

This project supports 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, develop and demonstrate closed loop systems for dispensing and storage, 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 project 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 NOx, VOC, CO, PM and toxic compound emissions from mobile sources. Such increased penetration of NGVs will provide direct emissions reductions of NOx, VOC, CO, PM and air toxic compounds throughout the Basin.

Proposed Project: Demonstrate Natural Gas Manufacturing and Distribution Technologies Including Renewables

Expected SCAQMD Cost: $1,000,000

Expected Total Cost: $10,000,000

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 NOx, PM and toxic compound emissions.

Fuels/Emission Studies

Proposed Project: Conduct In-Use Emissions Studies for Advanced Technology Vehicle Demonstrations

Expected SCAQMD Cost: $300,000

Expected Total Cost: $800,000

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 review and potentially coordinate application specific drive cycles to for 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.

Another proposed project would be the characterization of intermediate volatility organic compound (IVOC) emissions which is critical in assessing ozone and SOA precursor production rates. Diesel vehicle exhaust and unburned diesel fuel are major sources of and contribute to the formation of urban ozone and secondary organic aerosol (SOA), which is an important component of PM2.5.

Finally, while early developments in autonomous and vehicle-to-vehicle controls are focused on light-duty passenger vehicles, the early application of this technology to heavy-duty, drayage and container transport technologies is more likely. The impact on efficiency and emissions could be substantial. A project to examine this technology to assess its effect on goods movement and emissions associated with goods movement could be beneficial at this time.

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: $400,000

Expected Total Cost: $1,000,000

Description of Technology and Application:

The use of biofuels can be an important strategy to reduce petroleum dependency, air pollution and greenhouse gas emissions. Biofuels are in fact receiving increased attention due to national support and state activities resulting from AB 32, AB 1007 and the Low-Carbon Fuel Standard. With an anticipated increase in biofuel use, it is the objective of this 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 NOx emissions, which exacerbates the ozone and PM2.5 challenges faced in the Basin. In addition, despite recent advancements in toxicological research in the air pollution field, the relationship between biodiesel particle composition and associated health effects is still not completely understood.

Ethanol is another biofuel that is gaining increased national media and state regulatory attention. CARB has recently amended the reformulated gasoline regulation to further increase the ethanol content to 10% as a means to increase the amount of renewable fuels in the state. It is projected that the state's ethanol use will increase from 900 million gallons in 2007 to 1.5 billion gallons by 2012 as a result. As in the case of biodiesel, ethanol has demonstrated in various emission studies to reduce PM, CO and toxic emissions; however, the relationship between particle composition and associated health effects from the combustion of ethanol is not well understood either.

DME is another fuel which requires evaluation of in-use emissions, especially NOx, in light of Volvo's announcement in 2015 that they will commercialize class 8 trucks using DME in the near future. Furthermore, CARB recently proposed a regulation on the commercialization of alternative diesel fuels, including biodiesel and renewable diesel, while noting that biodiesel in older heavy-duty vehicles can increase NOx and the need for emerging alternative diesel fuels to have clear ground rules for commercialization. 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 project 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 project also supports future studies to identify mitigation measures to reduce NOx 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 NOx 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 (NOx 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 NOx 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

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.

Stationary Clean Fuel Technologies

Proposed Project: Develop and Demonstrate Reliable, Advanced Emission Control Technologies, and Low-Emission Monitoring Systems and Test Methods

Expected SCAQMD Cost: $150,000

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 NOx 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 NOx 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.

A recent demonstration project funded in part by the SCAQMD consisted of retrofitting a biogas engine with a digester gas clean up system and catalytic oxidizer at the exhaust followed by SCR which resulted in significant reductions of NO_x, VOC and CO. Based on the successful deployment of this project, further emission reductions may be achieved by other biogas combustion sources such as gas turbines and boilers by the continued development of specialized low cost biogas clean up systems that will allow for the use of catalytic after control systems.

Demonstrations of newer technologies in recent years could result in a commercially viable alternative to CEMS that is both reliable and feasible in terms of lower costs. For example, manufacturers of flue gas analyzers have, in recent years, developed low-cost multi-gas analyzers suitable for portable or stack-mounted use. Some preliminary testing of a new type of AFRC, which uses a different type of O2 sensor known as a wide-band O2 sensor, is another alternative that can be analyzed. Another technical approach might be to deploy technology utilizing the O2 signature of a post-catalyst O2 sensor and additional control concepts being developed by manufacturers. Since an underlying problem has been that engine, catalyst and AFRC manufacturers have developed systems independently, a system being co-developed to perform continuous diagnostics to assist operators in keeping rich-burn engines in compliance is possibly another alternative for demonstration.

Potential Air Quality Benefits:

Stationary engines, boilers, heaters, furnaces and ovens account for approximately 11 percent of total NO_x emissions and about 6 percent of total CO emissions. There has been a long-standing compliance problem with rich-burn IC engines in the basin and evidence indicates that many of these devices are operating with NOx and/or CO emissions above levels required in their permits. Projects could potentially reduce a significant class of NOx 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 NOx technologies (burners and ICEs);
- low-Btu gas technologies (e.g., digester, landfill, or diary 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 NOx, 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 PM2.5 standards.

Proposed Project: Develop and Demonstrate Renewables-Based Energy Generation Alternatives

Expected SCAQMD Cost: $200,000

Expected Total Cost: $1,000,000

Description of Technology and Application:

The objective of this proposed project 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 project 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 Draft 2016 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 project 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 NOx 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, NOx, 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 NOx adsorbers, could also have NOx reductions of up to 90%.

Proposed Project: Demonstrate On-Road Technologies in Off-Road and Retrofit Applications

Expected SCAQMD Cost: $200,000

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 NOx in 2004 to 0.2 g/bhp-hr NOx 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 NOx. 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
- applying 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.

Health Impacts Studies

Proposed Project: Evaluate Ultrafine Particle Health Effects

Expected SCAQMD Cost: $150,000

Expected Total Cost: $2,000,000

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, 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.

Furthermore, gasoline direct injection (GDI) vehicles are known for higher efficiency and power output but the PM emissions profile is not well understood especially on secondary organic aerosol (SOA) formation potential. As manufacturers introduce more GDI models in the market to meet new fuel economy standards, it is important to understand the SOA potential from these vehicles as it could lead to further impact on the ambient PM concentration in our region. Consequently, in 2015 a project was initiated with UCR/CE-CERT to investigate the physical and chemical composition of aerosols from GDI vehicles using a mobile environmental chamber that has been designed and constructed to characterize secondary emissions. Based on this initial results indicating an increase in particle numbers, follow-up in-use studies to assess PM emissions including with and without particle filters will be beneficial.

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: $150,000

Expected Total Cost: $500,000

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: $150,000

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, initiated in mid-2012, included an air monitoring program, an updated emissions inventory of toxic air contaminants and a regional modeling effort to characterize risk across the Basin. 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 factors, 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. Additionally, early identification of new health issues could be of considerable value and could be undertaken in this project category.

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, including gasoline and diesel generated VOCs. 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.

Technology Assessment/Transfer & Outreach

Proposed Project: Assess and Support Advanced Technologies and Disseminate Information

Expected SCAQMD Cost: $425,000

Expected Total Cost: $800,000

Description of Project:

This project 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 project 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 project 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 project 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 Implementation of Various Clean Fuels Vehicle Incentive Programs

Expected SCAQMD Cost: $325,000

Expected Total Cost: $400,000

Description of Project:

This project 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 NOx and PM emissions in the basin in addition to reducing toxic air contaminants.

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Appendix A

SCAQMD Advisory Groups

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Technology Advancement Advisory Group

Dr. Matt Miyasato, Chair	SCAQMD
Pending	Non-Governmental Organization
Dr. Alberto Ayala	California Air Resources Board
Pending	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
*Dawn Wilson	Southern California Edison
*David Pettit	Natural Resources Defense Council
Randall Lewis	Lewis Group of Companies
Tim Olson	California Energy Commission
*Nick Economides	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
Pending	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
*John Faust	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 Samuelsen	University of California, Irvine, Combustion Laboratory/National Fuel Cell Research Center
Dr. Robert Sawyer	Sawyer Associates
Kevin Walkowicz	National Renewable Energy Laboratory
Pending	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, 2017

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Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Hydrogen and Mobile Fuel Cell Technologies and Infrastructure						
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
12057	Linde, LLC	Expand Hydrogen Fueling Infrastructure	11/02/12	04/01/19	80,000	160,000
13155	Fletcher Jones Motor Cars (Mercedes-Benz)	Lease Two F-Cell Fuel Cell Vehicles for Two Years	02/08/13	02/08/17	44,995	44,995
14139	Hyundai America Technical Center Inc.	No-Cost Lease of Fuel Cell Vehicle for Two Years	12/13/13	12/31/17	0	0
14684	California Department of Food and Agriculture, Division of Measurement Standards	Conduct Hydrogen Station Site Evaluations for Site Certifications for Commercial Sale of Hydrogen	12/11/15	08/31/17	100,000	100,000
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
15609	ITM Power, Inc.	Installation of Riverside Renewable Hydrogen Fueling Station	10/06/15	10/05/19	200,000	2,325,000
15611	Ontario CNG Station, Inc.	Installation of Ontario Renewable Hydrogen Fueling Station	07/10/15	07/09/20	200,000	2,325,000
15618	FirstElement Fuel, Inc.	Installation of Eight Hydrogen Stations in Various Cities (two renewable, six delivered)	02/05/16	02/04/21	1,000,000	16,442,000
15619	H2 Frontier Inc.	Installation of Chino Renewable Hydrogen Station	12/04/15	12/03/20	200,000	4,558,274
15635	Center for Transportation and Environment	ZECT II: Develop and Demonstrate One Class 8 Fuel Cell Range-Extended Electric Drayage Truck	04/27/16	10/26/20	821,198	7,109,384
15641	Hardin Hyundai	Three-Year Lease of 2015 Tucson Fuel Cell Vehicle	06/15/15	06/14/18	22,862	22,862
16025	Center for Transportation and Environment	Develop and Demonstrate Fuel Cell Hybrid Electric Medium-Duty Trucks	02/05/16	08/04/20	980,000	7,014,000
16039	Lawrence Livermore National Laboratory	Demonstrate Prototype Hydrogen Sensor and Electronics Package	12/10/15	02/09/17	175,000	350,000
16171	Longo Toyota	Three-Year Lease of 2015 Toyota Mirai Fuel Cell Vehicle	12/15/15	12/14/18	24,567	24,567
16251	H2 Frontier, Inc.	Develop and Demonstrate Commercial Mobile Hydrogen Fueler	05/06/16	05/05/21	200,000	1,665,654

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Hydrogen and Mobile Fuel Cell Technologies and Infrastructure (cont.)						
17030	Bevilacqua-Knight, Inc.	Participate in California Fuel Cell Partnership for Calendar Year 2016 and Provide Support for Regional Coordinator	01/01/16	12/31/16	135,000	1,694,793
17059	Calstart Inc.	Develop and Demonstrate Fuel Cell Extended-Range Powertrain for Parcel Delivery Trucks	10/27/16	04/26/18	589,750	1,574,250
Electric/Hybrid Technologies and Infrastructure						
08063	Quantum Fuel Systems Technologies Worldwide, Inc.	Develop & Demonstrate 20 Plug-In Hybrid Electric Vehicles	01/22/08	01/31/18	2,165,613	2,899,057
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
13058	Capstone Turbine Corporation	Develop Microturbine Series Hybrid System for Class 7 Heavy-Duty Vehicle Applications	08/12/13	12/31/17	360,000	1,210,000
13396	Transportation Power Inc.	Develop and Demonstrate Seven Class 8 Zero Emission Electric Trucks	04/19/13	09/30/17	375,000	2,285,368
13426	Transportation Power, Inc.	Develop & Demonstrate Catenary Class 8 Trucks (1 Electric & 1 CNG Platform)	06/07/13	07/31/18	2,617,887	3,182,795
13433	U.S. Hybrid Corporation	Develop and Demonstrate Two Class 8 Zero-Emission Electric Trucks	06/26/13	09/30/17	75,000	150,000
13439	City of Carson	MOU for Catenary Zero Emission Goods Movement Project	10/01/13	07/31/18	0	0
14052	Altec Capital Services, LLC	Lease of Two Plug-In Hybrid Electric Vehicles	01/02/15	01/01/20	61,302	61,302
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
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	920,000	1,220,000
14222	Odyne Systems,LLC	Develop and Demonstrate Plug-In Hybrid Electric Retrofit System for Class 6 to 78 Trucks	04/24/14	05/31/17	389,000	2,226,571
14224	Complete Coach Works	Develop and Test Retrofit All Electric Transit Bus	04/24/14	02/28/17	395,000	867,182
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
15382	ChargePoint, Inc.	Install Electric Charging Infrastructure	01/23/15	01/22/17	162,000	162,000

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Electric/Hybrid Technologies and Infrastructure (cont.)						
15448	University of California Los Angeles	Site Selection for DC Fast Charge Network	04/21/15	04/30/17	10,000	10,000
15650	University of California San Diego	Develop and Demonstrate Solar Forecasting for Larger Solar Arrays with Storage and EV Charging	07/17/15	01/16/18	98,908	1,655,278
15680	National Renewable Energy Laboratory	ComZEV – Develop Detailed Technology and Economics-Based Assessment for Heavy-Duty Advanced Technology Development	08/28/15	04/14/17	500,000	500,000
16022	Gas Technology Institute	ZECT II: Develop and Demonstrate One Class 8 CNG Hybrid Electric Drayage Truck	12/04/15	06/30/20	1,578,802	5,627,319
16046	Transportation Power, Inc.	ZECT: Develop and Demonstrate Two Class 8 CNG Plug-In Hybrid Electric Drayage Trucks	12/04/15	09/30/17	195,326	2,103,446
16047	U.S. Hybrid Corporation	ZECT: Develop and Demonstrate Three Class 8 LNG Plug-In Hybrid Electric Drayage Trucks	11/06/15	09/30/17	22,896	1,996,675
16081	Broadband TelCom Power, Inc.	Provide EV Hardware and Control System at SCAQMD Headquarters including Installation Support, Warranty and Networking	04/27/16	04/26/22	367,425	367,425
16200	California State University Los Angeles	Cost-Share Regional Universities for U.S. DOE EcoCAR 3 Competition	04/14/16	04/15/20	100,000	300,000
16227	Selman Chevrolet Company	Lease One 2016 Chevrolet Volt Extended-Range Electric Vehicle for Three Years	02/01/16	01/31/19	15,677	15,677
17065	Clean Fuel Connection, Inc.	EV Infrastructure Installer	12/02/16	12/31/21	805,219	805,219
Engine Systems						
15626	Cummins Westport, Inc.	Develop, Integrate and Demonstrate Ultra Low-Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	07/10/15	07/30/17	3,500,000	7,233,000
15632	Gas Technology Institute	Develop Ultra Low-Emission Natural Gas Engine for On-Road Medium-Duty Vehicles	09/01/15	06/30/17	750,000	1,800,0000
16205	Cummins Westport, Inc.	Develop, Integrate and Demonstrate Ultra-Low Emission 12-Liter Natural Gas Engines for On-Road Heavy-Duty Vehicles	06/03/16	06/30/18	2,750,000	6,307,000
Fueling Infrastructure and Deployment (NG/RNG)						
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
08098	Redlands Unified School District	Purchase & Install New CNG Refueling Station	01/25/08	12/31/17	525,000	700,000
09364	Rim of the World Unified School District	Construct & Install a CNG Fueling Station	12/30/10	10/31/18	257,000	425,000

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Fueling Infrastructure and Deployment (NG/RNG) (cont.)						
12135	Placentia-Yorba Linda Unified School District	Upgrade CNG Fueling Station	11/18/11	11/30/17	60,000	60,000
12667	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
12854	Waste Management, Inc.	Upgrade LNG Fueling Station at Baldwin Park Facility	08/17/12	12/31/18	300,000	1,588,100
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
16075	City of Desert Hot Springs	Purchase One Heavy-Duty CNG-Powered Truck	03/11/16	03/10/20	38,000	63,000
16076	Coachella Valley Association of Governments	Purchase and Deploy One Heavy-Duty CNG Paratransit Vehicle	12/01/15	11/20/19	140,000	140,000
16244	CR&R, Inc.	Renewable Natural Gas Production and Vehicle Demonstration Project	09/03/16	03/02/20	900,000	55,000,000
16333	Ontario CNG Station, Inc.	Implement Alternative Fuel Station Expansion	05/13/16	11/12/19	200,000	798,535
17092	Kore Infrastructure, LLC	Construct RNG Production Facility and Demonstrate RNG with Next Generation Natural Gas Engine	10/14/16	10/13/21	2,500,000	25,500,000
Fuels/Emission Studies						
10722	University of California Riverside/CE-CERT	Re-Establish Testing Facility & Quantify PM Emission Reductions from Charbroiling Operations	08/06/10	06/30/17	60,000	321,700
14162	National Renewable Energy Laboratory	Utilization of Fleet DNA Approach and Capabilities to Provide Vehicle Vocational Analysis in SCAQMD	02/26/14	06/30/17	174,985	199,985
15607	University of California Riverside/CE-CERT	Innovative Transportation System Solutions for NOx Reductions in Heavy-Duty Fleets	12/19/15	05/30/17	79,980	139,980
15623	University of California Riverside/CE-CERT	Ozone and SOA Formation from Gasoline and Diesel Compounds	10/02/15	03/31/17	75,000	480,338
15625	University of California Riverside/CE-CERT	Evaluate SOA Formation Potential from Light-Duty GDI Vehicles	10/02/15	06/30/17	149,972	224,972
15636	University of California Riverside/CE-CERT	Evaluate PEV Utilization Through Advanced Charging Strategies in a Smart Grid System	12/15/15	08/31/17	170,000	270,000

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Fuels/Emission Studies (cont.)						
16198	Gladstein, Neandross & Associates, LLC	Study of Opportunities and Benefits of Deploying Next Generation Heavy-Duty Natural Gas Vehicles Operating on Renewable Natural Gas	09/02/16	09/02/16	50,000	250,000
16254	University of California Berkeley	Evaluate Ozone and Secondary Aerosol Formation from Diesel Fuels	10/25/16	08/31/17	106,361	106,361
17060	University of California Riverside	Bailment Agreement for Equipment Use for In-Use Emissions Testing of Heavy-Duty Inspection and Maintenance Program	10/13/16	10/12/18	0	0
Stationary Clean Fuels Technology						
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
13408	University of California Irvine	Demonstrate Building Integration of Electric Vehicles, Photovoltaics and Stationary Fuel Cells	09/30/13	09/01/17	150,000	270,000
Health Impacts Studies						
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
Technology Assessment/Transfer & Outreach						
05128	Mid-Atlantic Research Institute LLC	Development, Outreach and Commercialization of Advanced Heavy-Duty ad Off-Road Technologies	08/08/05	03/31/17	70,000	70,000
08210	Sawyer Associates	Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities	02/22/08	02/28/18	10,000	10,000
09252	JWM Consulting Services	Technical Assistance with Review and Assessment of Advanced Technologies, Heavy-Duty Engines, and Conventional and Alternative Fuels	12/20/08	06/30/18	30,000	30,000
12376	University of California Riverside	Technical Assistance with Alternative Fuels, Biofuels, Emissions Testing and Zero-Emission Transportation Technology	06/13/14	05/31/18	75,000	75,000
12381	Integra Environmental Consulting Inc.	Technical Assistance Related to Emission Inventories, Goods Movement and Off-Road Sources	04/06/12	04/30/18	110,000	110,000

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD $	Project Total $
Technology Assessment/Transfer & Outreach (cont.)						
12453	Tech Compass	Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis and Aftertreatment Technologies	06/21/12	05/30/18	75,000	75,000
13194	Clean Fuel Connection Inc.	Technical Assistance with Alternative Fuels, Renewable Energy and Electric Vehicles	12/07/12	03/31/17	140,000	140,000
14185	Three Squares Inc.	Conduct Education Outreach for the Basin DC Fast Charging Network Project	04/11/15	04/30/17	89,183	89,183
15369	Breakthrough Technologies Institute, Inc.	Technical Assistance with Low- and Zero-Emission Vehicles, Fuel Cells, Stationary Applications and Emissions Analysis	11/07/14	12/31/17	30,000	30,000
15380	ICF Resources LLC	Technical Assistance with Goods Movement, Alternative Fuels and Zero-Emission Transportation Technologies	12/12/14	12/11/18	30,000	30,000
15507	Jerald Cole	Technical Assistance with Alternative Fuels, Emissions Analysis, and Combustion Technologies	01/09/15	01/08/17	30,000	30,000
15516	Cordoba Corporation	Technical Assistance with Construction of Zero Emissions Goods Movement Demonstration Project	03/27/15	03/31/18	74,500	74,500
15610	Goss Engineering, Inc.	Conduct Engineering Services at SCAQMD Headquarters	06/02/15	12/31/17	50,000	50,000
17037	Clean Fuel Connection, Inc.	Technical Assistance with Alternative Fuels, Electric Vehicles, Charging and Fueling Infrastructure and Renewable Energy	11/18/16	11/17/18	50,000	50,000
17097	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alternative Fuels and Fueling Infrastructure, Emissions Analysis and On-Road Sources	11/04/16	11/03/18	100,000	100,000

Appendix C

Final Reports for 2016

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SCAQMD Contract #11150 **January 2016**

Operation & Maintenance of City of Burbank Hydrogen Fueling Station

Contractor
Hydrogen Frontier, Inc.

Cosponsors
California Energy Commission (CEC)
California Air Resources Board (CARB)
U. S. Department of Energy (DOE)
SCAQMD

Project Officer
Larry Watkins/Lisa Mirisola

Background
The City of Burbank has hosted a hydrogen fueling station since 2006, starting with hydrogen generated by electrolysis as part of the Five Cities Hydrogen Demonstration Program under Contract #05165 with Air Products and Chemicals, Inc. This onsite reformer station was built in 2009 by BP, with funding and support provided by U.S. DOE and GM.

Project Objective
In 2010, the project plan was to provide hydrogen to the Burbank station via a tube trailer that would off-load into existing storage containers, and the steam methane reformer would be restored for use when fueling demand increased. SCAQMD approved a contract with Hydrogen Frontier, Inc. to repair unsafe or inoperable equipment, and for restarting, operation and maintenance, training of staff in use of equipment and procedures, and providing detailed vehicle fueling reports. Funds for utilities were not included in the budget.

Due to increased need for hydrogen fueling services, and in order to continue operation and maintenance and pay for the increase in utility services (electricity and natural gas) for the onsite reformer and station, an amendment to the contract with Hydrogen Frontiers, Inc., was required to add funding and expand the scope.

Technology Description
This hydrogen fueling facility consists primarily of a 108 kg/day steam methane reformer (SMR), 240 kg of ground storage at 430 bar, with vehicle dispensing at both 350 & 700 bar refueling with associated supporting equipment.

This station is unique in its ability to use a compress-to-car top-off fueling profile, allowing more back-to-back fills without waiting for the station to replenish high pressure storage. As more zero emission cars are put on the road, it will be important to provide the customer a positive fueling experience.

Status
When Hydrogen Frontier took over the station from BP, it was a nonfunctioning 700 bar -20C and poor performing 350 bar delivery. With no support from prior companies, Hydrogen Frontier had to dissect all systems and review and rewrite operating codes for full functioning, achieving the best operating uptime of all stations in California for a period between 2011 & 2014. The SMR has nearly 19,000 runtime hours and still produces a kg of hydrogen for $3.86. The station while almost ten years old is showing its age; maintenance schedules & mean time between failures are shorter. However, this location remains desirable and has proven a viable asset to the infrastructure network.



Figure 1: Burbank H2 Station

Results
This station recorded 11 consecutive back-to-back fills all to 98% SOC (state of charge). No other station to date has yet to meet or exceed this achievement.

During operation and maintenance it was imperative all data be collected to substantiate

performance and maintenance schedules for reliable uptime and cost forecasting. Hydrogen Frontier designed and implemented a comprehensive data collection system that could be accessible through any internet connection. All captured data was then able to be exported into NREL (National Renewable Energy Laboratory) format for ease of reporting.

Monitoring and recording over 152 different parameters allowed management and technicians to effectively and safely operate equipment remotely. This data allowed diagnosing potential failures before they happened and summon the proper experienced technician to respond. This reduced overall operating costs and the need to be onsite or travel to site to diagnose problems after events happened.

Measured performance was interesting compared to other stations. With the ability to produce hydrogen onsite even initially with a low throughput, emissions from delivered hydrogen operations were reduced. As the throughput increased, station efficiency increased and it became economically viable at 12 cars a day. The production of hydrogen was adjusted to 55 kg/day to meet actual dispensing demand.

Achieving operational efficiency with the highest uptime with the limited funds available in less than a year is a significant accomplishment.

While this station was a compress-to-car fueling profile, all automakers brought fuel cell vehicles to fill and were happy with its reliability and performance. There has been a movement to only favor SAE J2601-2014 cascade-fill profiles. This protocol is very conservative; one disadvantage is that "state of charge" (SOC) will drop as more cars are waiting in line for the station to replenish the cascade pressure. Total hydrogen produced over four years was 162,000 kilograms.

Benefits

The project benefits are directly reduced emissions, increased hydrogen production/dispensing, energy efficiency and reduced global warming gases. This project provided important lessons learned on station operation and maintenance, which can be applied to subsequent hydrogen stations.

Project Costs

Original project costs were $1,060,000, as follows: U. S. DOE, $360,000; CARB, $300,000 (pass-through to SCAQMD); CEC, $200,000; and SCAQMD $200,000. However, SCAQMD augmented this funding with an additional $275,000 to continue station operation and maintenance though January 2016 under this contract.

The project costs were relatively low since all the major equipment was already paid for and this project mainly focused on evaluations of go or no-go decisions. All subsystems were evaluated for current operational status and then matrixes of additional elements were defined to ensure proper cost evaluations for operational status. Evaluation of critical spare components helped to achieve an operational goal of 99% uptime. These two models were used to reduce potential overspending for equipment that would not meet performance specifications. After initial funding sources were exhausted, additional funds were available to continue the operational and maintenance program based on past success.

Hydrogen cost at the dispenser was just under $5/kg and sold for $15/kg. With the small volume of cars during this period, actual costs varied by volume of throughput. Sometimes all the hydrogen produced was used, and at other times, only 20%. This made a baseline cost difficult to predict.

Commercialization and Applications

This type of operation and maintenance practice with this type of fill profile have provided valuable insights for the commercialization market. Energy efficiencies are better than conventional stations and back-to-back performance is virtually limited only by hydrogen production or delivery. Unfortunately, the SAE J2601 fueling profile will not be met 100% of the time without more funding for research and testing.

The station has become an important connector station for fuel cell vehicles in Southern California and provided up to 60 kg per day. Continued operation and maintenance of hydrogen fueling at this site helped bridge the gap in preparation for additional upgrade to provide retail sale of hydrogen for light-duty vehicles to be funded by a grant award under the CEC AB 118 program.

As the number of hydrogen vehicles on the road increases, different products with larger capacities, such as liquid hydrogen or pipeline supply and larger compressors, would need to be installed. Consideration should also be given to the use of renewable electricity generation, such as solar for the electrolyzers, due to the significant impact on operational costs and greenhouse gas emissions.

SCAQMD Contract #17030 **December 2016**

Participate in California Fuel Cell Partnership for CY 2016 & Provide Support for Regional Coordinator

Contractor

Bevilacqua-Knight, Inc. (BKi)

Cosponsors

7 Automakers
6 Public agencies
1 Technology provider
12 Associate members
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. (BKi) for their portion of CaFCP administration. SCAQMD joined the CaFCP in April 2000, and the CaFCP currently includes a total of 40 organizations interested in demonstrating fuel cell vehicle and fueling infrastructure technology.

Project Objectives

Several key goals for 2016:

- Develop the necessary infrastructure and processes to support early commercial launch and expanded vehicle rollout.
- Provide forums and opportunities for members to advance group collaboration and progress within CaFCP and among stakeholders.
- Reach target markets and communities to educate, inform and promote hydrogen and FCEVs.
- Restructure CaFCP to be more inclusive and capable of meeting the expanding commercial market needs and opportunities, broadening the member base, and being the voice of all stakeholder participants.

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 #17030 for 2016 membership. This contract was completed on schedule.



Figure 1: CaFCP participated with SCAQMD in the annual Glendale Cruise Night in July, educating attendees about fuel cell vehicles, such as the Toyota Mirai.

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, Honda's Clarity, Hyundai's Tucson, and Toyota's Mirai. The fuel cell transit buses include 13 placed at AC Transit (Van Hool buses with US Hybrid and Ballard fuel cells) and five placed at Sunline Transit (1 Ballard/New Flyer and 3 Ballard/BAE/ElDorado), one placed with Orange County Transportation Authority and one placed with UC Irvine Student Transportation..

Results

Specific accomplishments include:

- More than 1,000 consumers and fleets have purchased or leased FCEVs since FCEVs entered the commercial market in 2015;
- Transit agency members have demonstrated 28 fuel cell buses since 1999, with 20 currently in operation and more than 30 funded in 2016 (see Technology Description section);
- There are 25 retail and six other non-retail hydrogen fueling stations in operation in California and 26 in development.

- CaFCP staff and members continue to conduct outreach and education in communities throughout California;
- CaFCP, the Governor's Office of Business and Economic Development and the California Energy Commission, continue advising and responding to city staff across the state of California to optimize station permitting.
- CaFCP created and maintain the Station Operational Status System (SOSS) that more than 30 hydrogen stations in the U.S. use to report status to seven front-end systems.

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_2).

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 many of 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, and 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 $85,000 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 2016 was $134,800.

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 the following 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.

In 2017, the primary goals are to:

- Decrease hydrogen station development time lines and costs
- Identify technology challenges and information gaps within the state's hydrogen station network
- Coordinate and collaborate on consensus approaches to achieving first 100 hydrogen stations in California
- Identify new concepts & approaches to initiate exponential station network growth
- Communicate progress of FCEVs and hydrogen to current and new stakeholder audiences.
- Facilitate implementation of two FCEB (Fuel Cell Electric Bus) Centers of Excellence (No. and So. Calif.)
- Increase awareness and market participation of fuel cell electric trucks, including supporting the deployment of funded pilot projects
- Coordinate nationally and internationally to share and align approaches

SCAQMD Contract #10659 **September 2016**

Extended Data Collection for Plug-In Hybrid Medium-Duty Truck Demonstration

Contractor
Electric Power Research Institute (EPRI)

Cosponsors
EPRI
SCAQMD

Project Officer
Joseph Impullitti

Background
This project was to perform extended data collection for a project, *Develop and Demonstrate a Fleet of Medium-Duty Plug-In Hybrid Electric Vehicles Program*, which was sponsored by the U.S. Department of Energy (DOE) using American Recovery and Reinvestment Act of 2009 funding. This report provides insight to the data that was collected on the vehicles during the original project as well as during the extended period.

Project Objective
The original purpose of the Program was to develop a path to migrate plug-in hybrid electric vehicle (PHEV) technology to medium-duty vehicles by demonstrating and evaluating vehicles in diverse applications. The Program also provided three production-ready PHEV systems—Odyne Systems, Inc. (Odyne) Class 6-8 trucks, VIA Motors, Inc. (VIA) half-ton pickup trucks, and VIA three-quarter-ton vans. The vehicles were designed, developed, validated, produced and deployed. Data were gathered and tests were run to understand the performance improvements, allow cost reductions, and provide future design changes. The objective of the extended program was to provide another ten months of collected data from the fleets and provide analysis.

Technology Description
The VIA design is a series PHEV system. The electric motor provides all the propulsion power directly to the wheels. The gasoline engine provides torque to a generator that provides power to the battery pack and traction motor. The vehicles have up to 47 miles of all-electric range before the engine turns on and provides load-follower torque to the driveshaft while running in charge-sustaining mode. The general assembly process is that VIA purchases completed 2014 trucks from Chevrolet, eliminates the transmissions, and replaces them with generators. A motor and gearbox are attached to the prop shaft for traction torque, and two inverters are used to control the generator and the motor.

The Odyne hybrid system is a simple, parallel hybrid system that allows the torque of the electric motor to augment the torque output of the diesel engine, thus saving fuel. The motor speed is synchronized with the engine speed through the power take-off (PTO) unit. The traction motor drives the PTO, adding torque to the rear axle, or converts torque from the PTO into power to charge the hybrid batteries. Six patents have been granted, and other patents are pending.

Status
Sixty-two different utilities, municipalities, or companies participated from 23 states, as well as Washington, D.C.; British Columbia; and Manitoba. The participants demonstrated and evaluated 296 vehicles (52 VIA vans, 125 VIA pickup trucks and 119 Odyne trucks). Data were collected on each participant's trucks during normal working times to establish data for analysis. Although data collection for the project has been completed, the Program continues with the vehicles remaining in the fleet.

Results
Data were collected during the day and sent to the server daily. Data collected include the following:

- Motor, battery, charger and export power current and voltage
- Motor and engine torque and speed
- Odometer
- Vehicle speed
- Accelerator and brake pedal position
- Fuel used
- Charger time; and
- Software and calibration level.

To summarize the table below, more than 10,000 charge events (vehicles plugged in) were recorded with over 274,000 miles driven and more than 116,000 hours of data collected.

Total Summary Data

Variable	Measure	Units
All Event Types		
Number of events	67,651	Events
Number of active vehicles	272	Vehicles
Duration of all the events together	116,545	Hours
Number of Drive Events	49,708	Events
Number of Charge Events	10,150	Events
Number of Operate Events	7,793	Events
DRIVE INFORMATION		
Drive: Total Duration	11,588	Hours
Drive: Total Distance	274,615	Miles
Drive: Distance on Electric	102,298	Miles
Drive: Number of Events (CD+CS)	12,743	Events
Drive: Number of Events (CD)	30,203	Events
Drive: Number of Events (CS)	5,525	Events
Drive: Idle Duration	222	Hours
Drive: Fuel used during Drives	17,386	Gallons
CHARGE INFORMATION		
Charge: Plugged in Duration	99,386	Hours
Charge: Charging Duration	46,351	Hours
Charge: Wall Energy	105,565	kWh
Charge: Battery Energy	72,577	kWh
Level 1		
Charge Level 1: Number of charges	910	Events
Charge Level 1: Plugged in Duration	11,842	Hours
Charge Level 1: Charging Duration	6,968	Hours
Charge Level 1: Wall Energy	7,102	kWh
Charge Level 1: Battery Energy	4,278	kWh
Level 2		
Charge Level 2: Number of charges	7,373	Events
Charge Level 2: Plugged in Duration	87,405	Hours
Charge Level 2: Charging Duration	39,302	Hours
Charge Level 2: Wall Energy	98,411	kWh
Charge Level 2: Battery Energy	68,148	kWh
OPERATE INFORMATION		
Operate: Duration	6,060	Hours
Operate: Fuel Used	508	gallons
Operate: Export Electric Energy Used	987	kWh
Operate: Electricity Used	8,189	kWh

This program has accomplished the following:

- A large database for medium-duty truck PHEVs has been established.
- Fleet traits have been identified.
- Fleet fuel consumption and range have been determined.
- Charging traits have been identified; and
- More powerful charging stations are widespread.

Benefits

One of benefit of the Odyne system is to combine the fuel and emissions savings while driving with the engine-off benefits of hybrid jobsite operation. To accurately assess the system, the combined benefits are calculated in the full-day work cycle. Using the data that were gathered on the fleet, an average day's parameters can be calculated. The average drive distance is 26 miles, the average stationary work is complete in 2.8 hours, and the average idle time is 1.6 hours. Two calibrations were completed for the Odyne vehicles. One calibration was considered aggressive (strong), and the other was considered mild. The difference is that the aggressive calibration caused the battery energy to be depleted more quickly during the drive phase to the job site than did the mild calibration. Development tests were performed at Southwest Research Institute. The results indicated that there is improvement with both the aggressive and mild calibrations. The mild calibration improved fuel economy by 12% to 15%, and the aggressive calibration had a 30% to 46% improvement.

Project Costs

The SCAQMD provided $250,000 in Clean Fuels funding to perform the extended data collection with EPRI cost-sharing the effort with $93,748.

Commercialization and Applications

On the pathway to commercialization is emission certification. Both the VIA van and pickup truck are certified with the U.S. EPA. Currently, VIA is CARB compliant with executive orders from CARB indicating that the vehicles are certified with exception. The exception is that all the onboard diagnostic monitors are not being set as frequently as they should be. VIA is working on these exceptions and plans to meet the full certifications. Both the van and the pickup truck have received executive orders from CARB for vehicle sale; U.S. EPA has also approved them for sale. VIA worked with each agency to establish the requirements, and then VIA conducted and successfully passed the required tests, which included tailpipe emissions and evaporative emissions.

The extended data collection shows the durability, reliability and the lessons learned from the vehicles in real-world usage. It is imperative for a project like this to have a substantial amount of data, which was achieved from the project extension, and will be used for future development of this technology.

SCAQMD Contract #11606 **November 2016**

Develop and Demonstrate Plug-in Hybrid Electric Drive System for Medium- & Heavy-Duty Vehicles

Contractor
Odyne Systems, LLC

Cosponsors
Department of Energy
Odyne Systems, LLC

Project Officer
Joseph Impullitti

Background

Odyne Systems, LLC, has become a leading designer and manufacturer of parallel plug-in hybrid electric vehicle systems for the commercial medium- and heavy-duty truck market. The project was proposed in conjunction with a $1.9M DOE grant to develop and validate Odyne's second-generation plug-in hybrid system for commercial production, utilizing lithium-ion battery technology.

Project Objective

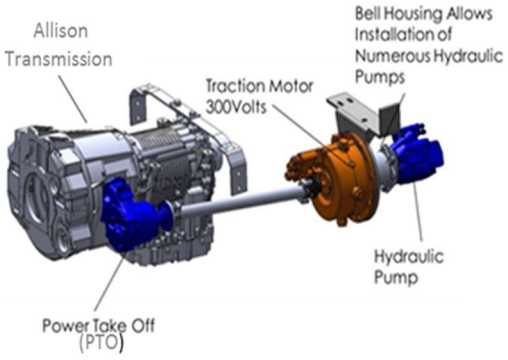
The project objectives were to develop, test, validate and deploy advanced medium-heavy-duty plug-in hybrid electric vehicles for work truck applications. The primary objectives of the project were:

- To match the size of the energy storage device relative to customer duty cycle
- To improve specific aspects of the existing system through use of a lithium-ion battery system
- To optimize the system and selected powertrain components for high-volume production
- To qualify improvements in fuel economy and emissions through prototype test and deployment of two medium-heavy-duty work trucks within the South Coast Air Quality Management District

Technology Description

The Odyne second generation plug-in hybrid system incorporates a novel approach in connecting the hybrid drive train to the vehicle offering idle reduction, regenerative braking, launch assist, climate control and exportable power. Odyne's unique, modular design interfaces seamlessly with a vehicle's transmission and can be installed on a wide range of chassis, powertrains and work truck applications. The minimally intrusive design provides both hybrid driving functionality and jobsite anti-idle electrification without significant redesign of the existing vehicle platforms.

Figure 1: Odyne PHEV Powertrain



Status

This project was completed in November 2016. The demonstration vehicles deployed at Anaheim Public Utilities and Los Angeles Department of Water and Power remain in daily use within the utility fleets.

Results

Odyne launched a 'clean sheet design' (i.e. developing a system from only a set of requirements) incorporating many automotive grade components and state-of-the-art lithium ion batteries (1X14kWh, 2X14kWh) produced by Johnson Controls. Full functional design validation was completed to verify performance. The testing demonstrated the capability to power equipment requiring up to 40 kW (53 HP), export 120/240V power up to 6 kW, support 12V vehicle loads up to 1.2 kW and provide 16,000 BTU of cabin heat or air conditioning.

Telematics systems were utilized to determine the real-world duty cycles for the deployment vehicles. The LADWP vehicle is utilized close to the fleet base with an average daily distance of approximately 11 miles and an average speed of just over 14 miles per hour. The Anaheim vehicle is used over a wider area with an average daily distance of 35 miles and an average speed of 23 MPH. At the job site, the LADWP unit is more heavily utilized, averaging 3.52 worksite hours vs. 1.06 hours for Anaheim.

Emissions testing was performed at the UC Riverside/CE-CERT facility. Results applied to the vehicle duty cycles determined by telematics analysis yielded the average savings displayed in Table 1.

Anaheim Avg. Full Day Emissions (35.9 Miles, 1.1 hour ePTO)				
	CO2 g	NOx g	Fuel gal	Grid Energy kWh
Conventional	71425	78.7	7.194	0.00
Hybrid	54197	62.5	5.458	4.36
Hybrid Change	-24%	-21%	-24%	X

LADWP Avg. Full Day Emissions (10.8 Miles, 3.5 hour ePTO)				
	CO2 g	NOx g	Fuel gal	Grid Energy kWh
Conventional	61474	94.5	6.192	0.00
Hybrid	16338	18.8	1.645	7.94
Hybrid Change	-73%	-80%	-73%	X

Table 1. Demonstration vehicle average daily fuel and emissions savings

Benefits

The differing results of the two vehicles demonstrates that the benefits of the Gen2 Odyne second generation Plug-in Hybrid System deployed in this project become more significant when the vehicle is more jobsite oriented. This is due to the initial focus and high value of eliminating jobsite diesel emissions. Regardless of application, the project demonstrated the capability of the system to reduce work truck fuel use and emissions. A full cycle (wells-to-wheels) analysis of the emissions results utilizing the CA-GREET 2.0 model information with the duty cycles identified demonstrated that the inclusion of wells-to-tank emissions did not significantly alter the results of Table 1.

Costs

The SCAQMD cost-share for this project was $494,000. The Department of Energy cost-sharing project DE-EE0001077 was completed at a final contribution of $2,986,315.

Commercialization and Applications

The Odyne system developed in this project was further deployed under SCAQMD contract #10659 funded by the American Recovery and Reinvestment Act and is now released for commercial sale. Based, in part, on the testing performed in this project, the Odyne second generation plug-in hybrid system was approved for use in California under Executive Order D-750. Odyne is continuing to work with suppliers on reducing component costs and working with supporting agencies to initiate projects to increase the driving and full-day fuel and emissions savings in order to continue to improve the customer value and return on investment.

SCAQMD Contract #11615 **August 2016**

Develop and Demonstrate Heavy-Duty Hydraulic Hybrid Vehicles

Contractor
Parker Hannifin Corporation

Cosponsors
California Energy Commission
Parker Hannifin Corporation
SCAQMD

Project Officer
Brian Choe

Background
Despite being a relatively small percentage of the vehicle population, heavy-duty vehicles represent a significant source of NOx and PM emissions in the South Coast Air Basin. Hybridization is one of the key strategies to reduce emissions from this segment, but more studies and demonstrations are needed to match technologies to vocations with duty cycles that are well suited. For example, hydraulic hybrids are power dense, which allows them to absorb and release energy at high rates; however, these systems are not sufficiently energy dense to store a large amount of energy onboard. Based on these attributes, refuse and delivery vehicles, with intensive stop-and-go driving behavior, will be ideal applications for the technology.

Project Objective
The primary objective of this project was to demonstrate potential for fuel savings, emissions reduction and overall economic benefits of hydraulic hybrid trucks in parcel delivery and refuse collection operations. The project was also to collect real-world data to evaluate and validate fuel savings and emissions reduction benefits in comparison to that of conventional diesel-fueled vehicles.

Technology Description
Parker's "RunWise" hydraulic hybrid system uses pumps and accumulators to capture kinetic energy otherwise lost during braking, and then utilizes this stored energy to propel the vehicle from standstill. The Parker control unit interprets driver demand and keeps the engine at or close to idle, while the hydraulic pumps/motors are used to accelerate the vehicle. This results in significantly lower fuel consumption which in turn reduces emissions. The system can turn the engine off under certain operating conditions in the parcel delivery vehicles. The vehicles are then powered by the stored hydraulic pressure only, further reducing emissions.



Figure 1: Parker's RunWise Hydraulic Hybrid System

Status
In this project, Parker Hannifin (Parker) deployed eight refuse and four parcel delivery vehicles with fleets and municipalities for an 18-month demonstration. The vehicles were equipped with an onboard telematics system to record vehicle performance, including vehicle speed, idle time, fuel consumption, collection arm cycles (refuse) and engine-off duration (parcel). This project was completed in June 2016 and a final report has been submitted to the SCAQMD.

Results
This demonstration provided data that validated that hydraulic-hybrid vehicles can be more fuel efficient and produce fewer harmful emissions when compared with diesel-powered vehicles equipped with conventional automatic transmissions.

The parcel delivery vehicles collectively covered a distance of 35,500 miles during the demonstration period, with an average fuel economy of 9.2 miles per gallon or 51% improvement versus the baseline of 6.1 mpg, and approximately 29 tons of reductions in CO2 emissions.

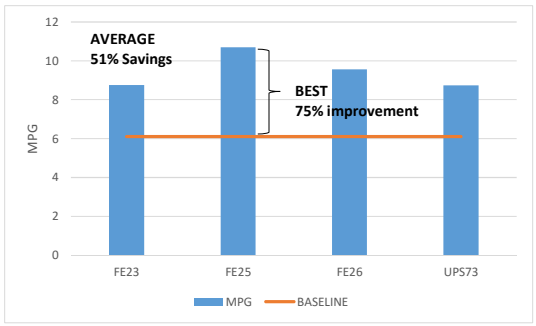


Table 1: Parcel truck fuel economy improvement vs baseline

Refuse vehicles covered a distance of over 106,000 miles, with an average fuel burn rate of 2.4 gallons per hour or 47% savings versus the baseline of 4.5 gph, which is consistent with the estimated national fuel savings average for the entire North American fleet at 43%. Approximately 210 metric tons of CO2, 921 lbs. of CO, and 203 lbs. of NOx were eliminated by the refuse vehicles during the demonstration period. Furthermore, zero brake pad replacements were reported on both refuse and parcel delivery vehicles, and the total cost savings realized by the fleet operators, as a result of using the Parker hydraulic hybrid system, is over $110,000 on fuel costs and $54,000 on brake maintenance.

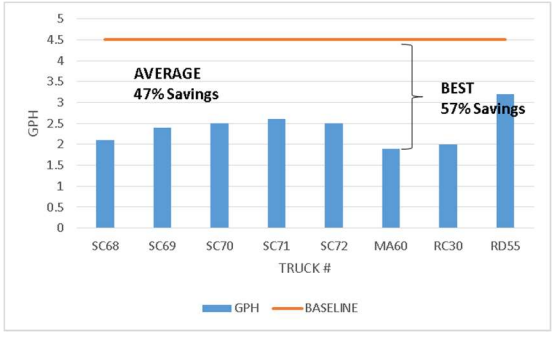


Table 2: RunWise fuel savings vs baseline

Benefits

Refuse vehicles consume approximately 50 gallons of fuel each day whereas the Parker's hydraulic hybrid system can reduce this by an average of 47% per vehicle with corresponding reductions in emissions. Extrapolating this over the entire fleet of approximately 75,000 refuse vehicles in California, the emissions reductions could reach 1.9 million metric tons of CO2, 8.6 million lbs. of CO and 1.9 million lbs. of NOx.

In addition, the total cost savings achieved by the eight refuse and four parcel delivery vehicles during the demonstration was approximately $164,000, between fuel costs and brake maintenance. An extrapolation of these savings over the entire refuse fleet in California would yield an annual saving of over $600 million.

Project Costs

The total project cost was $3,925,000 with the SCAQMD and CEC cost-sharing $250,000 and $750,000, respectively. The remaining $2,925,000 was cost-shared by Parker and demonstration fleets.

Commercialization and Applications

Parker's first-generation hydraulic hybrid technology ("RunWise"), used in refuse vehicles, has been commercialized and is currently available for sale in all 50 states. This technology is unique to the refuse vehicle application and therefore market penetration is limited as approximately 10,000 Class 8 refuse vehicles are sold annually in the U.S., of which only 30% are automated side loaders, which is the 'sweet spot' in U.S. terms of performance optimization for this system.

The technology used on the parcel delivery vehicles is second-generation with a very broad market potential. This product, while similar in function, is lighter, less complex, more reliable and significantly less expensive than the first-generation system. This system can be applied in place of a conventional transmission in any stop/start duty cycle application–from parcel delivery vehicles to transit buses.

This second-generation product costs approximately between one-third and one-half that of the RunWise system (depending on application), providing up to 40% fuel savings, which would realize a return on investment for the end-user in two to three years. Parker expects the cost of the second-generation system to decrease even more as volume increases. Parker has completed the development of this next-generation system and would be ready to go to market if favorable demand conditions occurred in the U.S. Currently, the product is being marketed in South America and Asia.

When compared with other alternate fuel and electric hybrid technologies, this is a technology on the market today that delivers fuel and emissions savings at a price point that can provide a return within a few years of ownership and that does not require significant investment in infrastructure to deploy on a broad scale.

SCAQMD Contracts #14202, et al. **April 2016**

SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure

Contractor
Various SoCalEV partner organizations

Cosponsor
SCAQMD
California Energy Commission (CEC)

Project Officer
Patricia Kwon

Background

The Southern California Regional Plug-In Electric Vehicle Plan (SoCalEV) is a regional collaborative among cities, utilities, automakers, local and regional government agencies, businesses and others in the region who are actively engaged in supporting and building the necessary infrastructure for the commercial launch of electric vehicles. The SoCalEV Ready project was funded by a CEC grant to deploy 321 Level 2 and two DC fast charging stations throughout the four-county South Coast air district, with the grant administered by SCAQMD. These chargers were deployed starting in 2013, with all installations completed by April 2016.

Project Objective

Under multiple contracts or memoranda of agreement (MOAs) executed with SoCalEV partners, chargers are sited at local government agencies, universities, hospitals, and cultural destinations to create greater availability of public charging infrastructure, supplementary to residential and workplace charging. Installations were performed either by SoCalEV partners or contracted installers with experience in commercial installations. CEC funds were used for a portion of the costs associated with hardware and/or installation, and SoCalEV partners used their own funds as required cost sharing (39%) for the CEC grant to pay remaining costs. SoCalEV partners that completed their installations include the Cities of Claremont, Covina, Lake Elsinore and Palmdale; County of Los Angeles; California State University campuses at Fullerton, Long Beach, Los Angeles (Department of Water and Power), and San Bernardino; California State Polytechnic University, Pomona; and University of California Irvine. Participating installers included the non-profit Adopt-A-Charger and Associated of Los Angeles (ALA).



Figure 1: Los Angeles Zoo, DC Fast Charger and Level 2 EVSE (electric vehicle supply equipment)

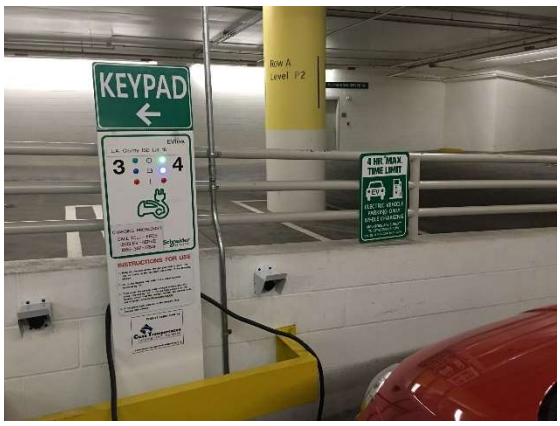


Figure 2: Los Angeles County Disney Center parking structure, Level 2 EVSE

Technology Description

EV charging stations are commercially available technology including Level 2 (240V) charging stations with SAE J1772 connectors and DC (480V) fast charging stations with CHAdeMO and CCS connectors. These connectors worked with all of the EVs available on the market: all EVs can use the J1772 connector for Level 2 charging. Asian manufacture EVs use the CHAdeMO connector while American/European manufacture EVs use the CCS for DC fast charging.



Figure 3: Getty Center parking structure, Level 2 EVSE

Status

The majority of installations were completed by December 2015, with a few installations completed by April 2016. As part of MOA terms and conditions, SoCalEV partners provided charger utilization data and lessons learned on this project. CEC sent a program evaluator in November 2015 to visit a dozen sites to confirm charger performance and high level of utilization. The following MOAs under this project were closed in 2016 and are as follows:

SoCalEV Partner	Contract #
Adopt-A-Charger	14202
Associated of Los Angeles (ALA)	14204
Los Angeles Department of Water & Power	14336

Results

In April 2016, SCAQMD created a final report to CEC on the overall deployment effort, data analysis and policy recommendations. Charger utilization data includes Table 1 below for chargers installed at California State University Los Angeles.

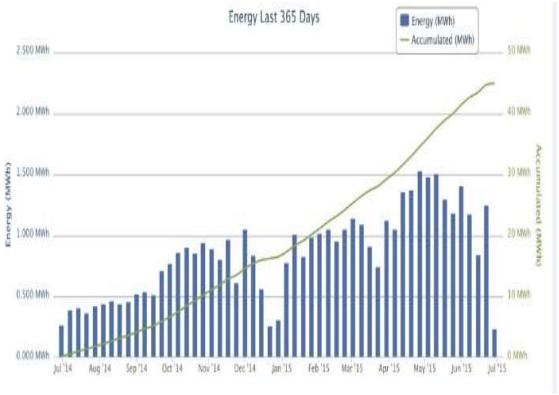


Table 1: Charger Utilization at CSULA

Benefits

This project was important in increasing the deployment of public charging infrastructure at a variety of workplaces and destinations. It also assisted in making EV infrastructure more visible to the general public addressing 'range anxiety', and significantly increasing the electric range of EVs to allow for longer and more frequent zero-emission trips and vehicle miles traveled.

Project Costs

The CEC grant provided funding towards hardware and/or installation in the amount of $840,750 with SoCalEV partners providing additional cost sharing in the amount of $542,659. Total project costs were $1,383,409. In addition to the 321 funded installations, two DC fast charging stations were installed at the Los Angeles Zoo and Los Angeles International Airport through a partnership with Los Angeles Department of Water and Power and Adopt-A-Charger.

Commercialization and Applications

Level 2 and DC fast charging stations are fully available commercial technologies which have been and will continue to be deployed for a variety of purposes including residential, public, workplace, and destination charging. This deployment project assisted in accelerating the availability of public charging infrastructure which is much needed to go beyond the early adopter stage and have the technology embraced by the general public.

SCAQMD Contract #15021 **December 2016**

Upgrade and Demonstrate Two Electric Yard Tractors

Contractor
Transportation Power, Inc. (TransPower)

Cosponsors
SCAQMD
U.S. EPA Region IX-Clean Air Technology Initiative (CATI)

Project Officer
Richard Carlson

Background

In 2013, Transportation Power, Inc., (TransPower) developed and placed into regular revenue service two prototype electric yard tractors hauling heavy containers at a San Antonio, TX retailer facility under demanding duty cycles similar to those at port terminals, warehouse distribution centers and railyards. The tractors accumulated nearly 1,000 miles of actual service and demonstrated they could operate under the duty cycle for as long as 13 hours between battery charges.

Consequently, SCAQMD worked with TransPower to identify system improvements incorporating lessons learned from the initial deployment in San Antonio. TransPower staff believed that deploying the yard tractors upgraded with the latest TransPower energy storage and drive technology at various facilities such as warehouse distribution centers in Southern California would provide additional information on the performance of zero-emission yard tractors under various operations and facilitate user acceptance.

Project Objective

This Project included upgrading the two yard tractors with the latest TransPower energy storage, battery management system, power controls, and drive system and then demonstrating the two yard tractors at distribution centers in the South Coast Air Basin.

Technology Description

The TransPower "ElecTruck-YT" system includes the following major subsystems:

- 160 kWh lithium iron phosphate (LiFePO4) energy storage system
- On-board 70 kW fast charger
- 150 kW PMAC electric drive motor
- 6 speed Eaton Automated Manual Transmission
- Electric accessories (power steering, battery/motor cooling system, cabin air conditioning/heating system, and alternator).

The upgraded yard tractors included the following improvements:

- adaptation of a heavier-duty transmission and shifting mechanism
- automated shifting software
- monitoring and protection of batteries when vehicles are unattended
- integration of battery monitoring and overall tractor control software
- battery management system sensor design
- electrically driven accessory inverter
- battery cell packaging to improve accessibility for servicing.

Status

Upgrade of both yard tractors was completed in 2014. In 2015 and 2016, the two yard tractors were demonstrated at a number of port terminals and warehouse terminals in Southern California. To meet the San Antonio facility requirements, the two yard trucks were built with dual rear axles. However, most facilities in Southern

California preferred single rear axle tractors due to space limitations, which unfortunately limited our demonstration site options. Nonetheless, the two yard trucks served as successful demonstration vehicles and helped commercialize the technology.



Figure 1: Upgraded Electric Yard Tractors

Results

One tractor has accumulated 350 hours and 1,560 miles in 2015 and 2016 while operating at a recycling facility and regional building material distribution center. It has operated satisfactorily except for a radiator leak caused by a broken cooling fan bracket and an inverter failure both of which have been repaired. The second tractor has accumulated 92 hours and 165 miles in 2015 and 2016. It has been used primarily as a demonstrator and show vehicle. It was also tested at Southern California Edison for evaluation of electrical loads during charging.

Benefits

The electric yard tractor project promoted the commercialization of zero-emission goods movement equipment, specifically involving ports, warehouses and distribution centers in the South Coast Air Basin. Zero-emission transportation and goods movement technologies are included within SCAG's Regional Transportation Plan and SCAQMD's 2016 Air Quality Management Plan.

This successful demonstration of battery electric yard tractors will move the technology closer to commercialization for wide-scale market deployment and the region closer to attainment of clean air standards by eliminating diesel particulate matter and NO_x emissions. Additionally, since yard tractors are used to move goods in and around warehouse distribution centers, marine port terminals, and railyards, the application of zero-emission technologies will improve the air quality in these disproportionately impacted communities.

Project Costs

The total fixed price of this contract was $405,000 of which $330,000 was contributed by the U.S EPA CATI program and $75,000 was from the SCAQMD Clean Fuels Fund.

Commercialization and Applications

The technology demonstrated in this project has been commercialized. These two yard tractors serve as demonstrators of the technology and its capability to perform in commercial applications. Based on favorable responses from fleets seeing and using these yard tractors, other vehicles including yard trucks, drayage trucks, and school buses have been built or are on order.

Electric vehicles are currently produced by converting an existing vehicle. Future effort is being devoted to scaling up production by linking TransPower with one or more vehicle manufacturers that will assemble new vehicles with electric drive.

SCAQMD Contract #14364 **August 2016**

Develop, Integrate and Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles

Contractor

Cummins, Inc.

Cosponsors

California Energy Commission-Public Interest Energy Research (PIER)
SCAQMD
Southern California Gas Company

Project Officer

Richard Carlson

Background

The 2012 AQMP identified heavy-duty diesel trucks as one of the largest source categories for NOx emissions. currently and in future years, even as the legacy fleet of older and higher-polluting vehicles were to be retired and replaced with vehicles meeting the 2010 NOx standard of 0.2 g/bhp-hr. The 2012 AQMP also showed that NOx reductions in excess of 60% would be required from all source categories in order to meet future federal ambient air quality standards for ozone.

In 2012, diesel engines and diesel engine emission control technologies did not appear capable of achieving NOx emissions significantly lower than the 2010 standard. SCAQMD had previously worked successfully with engine manufacturers to introduce heavy-duty natural gas engines which had NOx emissions meeting the 2010 standards earlier than diesel engines. SCAQMD worked with CEC to develop a jointly funded program to develop a natural gas engine targeting NOx emissions 90% lower than the 2010 standard.

In 2013, SCAQMD issued a request for proposals to develop and demonstrate an ultra-low NOx natural gas engine. Cummins, Inc., was one of two organizations selected from the competitive solicitation.

Project Objectives

This project included the following emission objectives using U.S. EPA/CARB certification test procedures:

- Meeting 0.02 g/bhp-hr NOx
- Meeting other 2010 pollutant standards
- Achieving 10 ppm ammonia average or as low as possible

Other objectives affecting commercial viability of the engine included:

- Minimizing fuel consumption loss vs diesel
- Maintaining same power as diesel
- Complying with U.S. EPA/CARB certification requirements
- Providing cost, performance, drive quality and durability similar to diesel.

Technology Description

The engine was derived from Cummins 14.9-liter ISX15 diesel engine but had newly designed manifolds, heads, camshaft, piston, EGR, turbocharger, and catalyst after treatment, all purposely designed for optimal performance with natural gas. The final technology configuration consisted of:

- Stoichiometric air-fuel ratio
- Port fuel injection
- Big intake - small exhaust valves
- Improved cooling of head and spark plugs
- Flow-optimized intake manifold and exhaust manifold
- High energy ignition system
- Cooled EGR
- Waste-gate turbocharger
- TWC aftertreatment: close-coupled and main underbody

Status

Extensive simulation modeling was conducted to evaluate alternative design strategies. The goal was to improve the following engine characteristics: cylinder-to-cylinder variation, cycle-to-cycle variation, residual in-cylinder gases, combustion efficiency, pre-ignition knocking and pumping efficiency. These characteristics compromise performance of natural gas engines converted from diesel engines. Several test engines were

assembled as part of the design and development work. An engine containing the final internal and external engine hardware, optimized control software, and after treatment system was tested according to the cold/hot Heavy Duty Engine Federal Test Procedure (HD-FTP) and was operated without failure for more than 500 hours under a wide range of speed and load conditions.



Figure 1: Test Engine on Dynamometer

The design and integrated technology has been demonstrated using a variety of engine dynamometer tests to meet all program objectives except 10 ppm ammonia. Unfortunately, market demand for a 15-liter natural gas engine is currently insufficient to justify launching this new engine at this time. The technology is scalable over an 8- to 15-liter size range and Cummins intends to incorporate this technology in the next natural gas engine which is expected to be released in the 2019-2020 timeframe.

Results

The ISX15-G engine has achieved the following results. All except ammonia achieved and surpassed the project targets. Further optimization of software controls and the after treatment system is expected to reduce ammonia below 20 ppm.

Parameter	Target	ISX15-G
NOx	0.02	0.003
PM	0.01	0.004
NMHC	0.14	0.010
CO	15.5	1.850
Ammonia	10 ppm	58 ppm

The Brake Thermal Efficiency (BTE) target was zero or no loss compared to diesel on an equivalent energy basis. BTE in the final configuration was 11.5% higher than the baseline natural gas engine configuration resulting in a BTE loss of less than 1% compared to typical diesel engines.

Benefits

This program demonstrated that a well-designed natural gas engine can achieve both near-zero NOx emissions and thermal efficiency and performance equivalent to diesel engines. The Program provided a design pathway for developing other near-zero NOx natural gas engines with performance similar to a diesel engine.

Project Costs

A contract for $2,061,000 was executed from the Clean Fuels Fund, which included $250,000 and $561,000 in revenue from CEC and SoCalGas, respectively. Cummins contributed $1,808,000 in cost-share for a project total of $3,869,000.

Commercialization and Applications

The engine and after treatment systems developed in this study have been shown to meet the near-zero emission targets as well as provide fuel consumption lower than current natural gas engines; and incorporate design changes to improve engine robustness, reduce maintenance, and provide improved driving performance, particularly during transient operation. Unfortunately, the low cost of diesel fuel and limited natural gas fueling facilities nationwide limit the national sales potential of this large natural gas engine. Commercialization of this natural gas engine requires new tooling, the cost of which cannot be justified by the current low sales volume of natural gas engines. As a result, this ISX15-G engine will not be certified or introduced into the market at this time.

Cummins will evaluate market conditions for large natural gas engines and can apply the technologies developed in this program to engines in the 9-liter to 15-liter size range. A number of options are under consideration for certification and eventual commercialization of the technologies developed as a result of this project in the early 2020 timeframe.

SCAQMD Contract #05250 **April 2016**

Purchase and Install New L/CNG Fueling System at Commercial Fueling Station in Temecula

Contractor

Downs Energy

Cosponsors

California Energy Commission
City of Temecula
MSRC/AB 2766 Discretionary Fund
SCAQMD

Project Officer

Larry Watkins/Phil Barroca

Background

Downs Energy sought to construct, with funding, through the support of granting agencies and local municipalities, the first publicly accessible LNG station in Southern California. This station was a critical link in the network of natural gas stations in Western Riverside County and the South Coast Air Basin. This station utilizes state-of-the-art equipment and serves a variety of light-, medium- and heavy-duty natural gas vehicles, school and transit buses, and refuse and commercial trucks traveling throughout the region. SCAQMD's efforts have increased deployment of alternative fuel vehicles and increased alternative fuel throughput in the region.

Project Objective

The project objective included construction of an LNG and L/CNG station, providing a critical link in the network of natural gas stations in Western Riverside County and the South Coast Air Basin. The new station would have the ability to provide a throughput of 300,000 gasoline-gallon equivalents (GGE) annually.

Technology Description

The scope of the project included: one 15,000 gallon LNG storage tank; one 2-stage pump providing 95 psig minimum differential pressure at 60 gpm;.one LNG single hose dispenser and dual hose dispenser with two nozzles at 3000 and 3600 psi fast fill. Access to the LNG station would be through integration with the Commercial Fueling Network (CFN) or a Downs Energy card. Access to CNG fueling is allowed via the use of common credit cards (Mastercard, Visa, Voyager, WEX).

Status

The station construction was completed in April 2009. The normal startup procedures for the fueling station included a purging and cold shock process, a nitrogen leak test, and an operational demonstration of each of the station's normal operations. The on-site training took place on March 31, 2009 with all-day training in the proper operation and use of the equipment. Commissioning of the station took place on April 16, 2009.



Figure 1: CNG Station in Temecula

There were several unanticipated permitting problems with the City of Temecula due to

conditions not previously encountered for the specific building conditions of an L/CNG station. Therefore, delays were encountered with ADA (Americans with Disabilities Act) compliance which extend the project. A second delay factor was caused by inclement weather issues, which delayed the project an additional two months.

Throughput was lower than projected by year three; as a result, the five-year period of annual reporting was extended by three years for a total of eight years, ending in 2016.

Results

Obtained through construction of the L/CNG station was the availability of a fueling facility within proximity of both Northern and Southern California. The early estimates place the reduction in PM and NOx emissions with the South Coast Air Basin at approximately 15 tons.

Table 1: Throughput 2009-10 to 2015-16

Fiscal Year (Apr-Mar)	Volume (GGEs)
2009-10	29,004
2010-11	40,163
2011-12	92,725
2012-13	153,982
2013-14	141,089
2014-15	123,768
2015-16	124,797

The long-term result will be improved fuel accessibility and additional penetration of clean fuel natural gas vehicles in Southern California providing cleaner air in the region.

Benefits

Alternative fuel technology has been and continues to be a major component in achieving emission reductions from both stationary and mobile sources. This project complements existing efforts promoting alternative fuel technology in the mobile sector, as well as facilitates market readiness for private, public, and commercial operation of natural gas vehicles.

This project benefits the environment of the South Coast Air Basin in several ways beginning with the reduction in diesel particulate emissions and the increased efficiency of having an L/CNG fueling facility located in Temecula, CA. Diesel consumption would be reduced as outlined in Table 1, below, in gasoline gallon equivalents for the Temecula station. This station creates a seamless web of fueling infrastructure along critical transportation corridors to enable low-emission natural gas vehicles to travel more freely throughout California and the western U.S.

Project Costs

LNG/CNG Grant Funding		
California Energy Commission	Equipment only	$250,000.00
AQMD - #02061	All costs	$250,000.00
AQMD - #05250	All costs	$203,137.00
MSRC #MS04052	All costs	$250,000.00
City of Temecula	All costs	$150,000.00
Total Grant Funding		$1,103,137.00
Project Cost		1,232,247.22
Downs Share	11.94%	$147,158.10

Commercialization and Applications

SCAQMD's efforts have increased deployments of alternative fuel vehicles and increased alternative fuel throughput in the region. Consumer education about alternative fuel cost savings, emission regulations and grant/tax incentives is critical to expanding the penetration of alternative fuel vehicles.

SCAQMD Contract #06042 **December 2016**

Upgrade Existing CNG Public Access Station with Dispenser and Card Reader

Contractor
University of California Los Angeles
Clean Energy Fuels (subcontractor)

Cosponsors
Clean Energy Fuels
MSRC/AB 2766 Discretionary Fund Program
SCAQMD
University of California Los Angeles

Project Officer
Larry Watkins/Phil Barroca

Background

The University of California Los Angeles (UCLA) was an early adopter of compressed natural gas (CNG) as a fleet fuel. The station selected for upgrade under the terms of Contract #06042 was a first-generation system, installed in 1993. The original set-up of the station included public use; however, its primary user was the UCLA fleet.

Project Objective

UCLA now operates 62 CNG fleet vehicles, including 14 CNG campus shuttle buses. To meet growing fuel demands of the UCLA fleet and public users, the facility required a system upgrade. The project objective was to replace the existing card reader located at the CNG fueling station at fleet services. The proposed upgrade would expand its potential users and bring this first-generation system to the capability and reliability level found in the state-of-the-art CNG systems installed today.

Technology Description

The selected card reader system was the FuelForce FF 814 card reader system with video training modules for first-time users. The system supports all retail credit card transactions including Visa, MasterCard and Voyager as well as Wright Express and Voyager fleet cards.

The construction of the new system included the installation of a split priority panel, a Greenfield video dispenser, and a credit card terminal.

Status

Station construction commenced in May 2008. A Grand Opening was held on August 28, 2008. A report was submitted to the SCAQMD for consideration in late 2008, but projected throughput was higher than actual gallons dispensed. As a result, the five year period of annual reporting was extended by three years for a total of eight years, ending in 2016.



Figure 1: Card Reader at UCLA

Results

We believe this project to have been a success as the station has seen an increase in transactions and gallons dispensed while remaining robust and reliable. Since completion of the facility upgrade, the UCLA station has dependably supplied CNG fuel to the campus community and local private fleets.

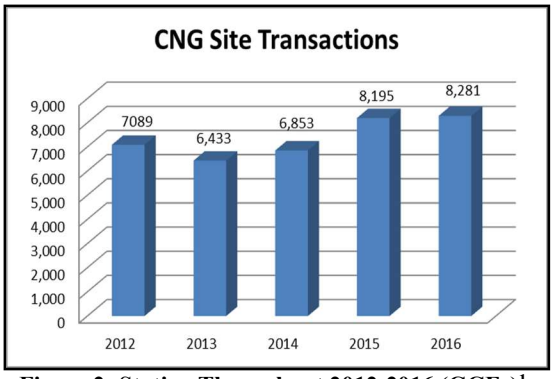


Figure 2: Station Throughput 2012-2016 (GGEs)[1]

At the completion of the upgrade, an average 425 transactions were completed per month. In 2016, the UCLA site averaged 690 transactions per month, the highest number recorded. The facility is technically capable of reaching the throughput requirement of an estimated 920 transactions per month and 150,000 GGE annually.

Benefits

Fueling infrastructure does not provide emission reduction benefits or improved air quality on its own; rather, benefits are achieved from the natural gas vehicles that fuel at reliable stations such as this. The UCLA CNG station provides the UCLA fleet and private West Los Angeles users with a reliable source of fuel for their vehicles.

The UCLA CNG fleet has increased incrementally over the years, thereby reducing the number of traditional gasoline vehicles driven for campus operations. Some CNG operators have since opted for electric vehicles after feeling comfortable with an alternatively fueled vehicle, thus reducing greenhouse gas emissions even further.

Without a state-of-the-art card reader, the original first-generation station would not have been able to service the 8,300 transactions seen in 2016. As such, the upgraded card reader has facilitated a 63% increase in the volume of CNG transactions since its installation and is capable of conducting increasing numbers of transactions over the coming years.

Project Costs

At the time of contracting, the project budget was estimated at $31,842, with the SCAQMD contributing $15,921, or 50% of the project cost, and the MSRC (AB 2766 Discretionary Fund Program) was contributing the remaining 50%. At the close of construction, the total project cost was $61,799, with UCLA paying the remaining project costs and Clean Energy Fuels contributing some in-kind services. The $15,921 contributed by the SCAQMD represented 26% of the total budget.

Commercialization and Applications

Compressed natural gas as a vehicle fuel is commercially available on a limited basis throughout the South Coast Air Basin. This project expanded the transactional capacity of an existing CNG station to allow greater user access, thus expanding the viability of this alternative fuel in the West Los Angeles area.

Future card reader upgrades may include smart card Europay, MasterCard and Visa (EMV) technology, for enhanced security and expansion of payment methods. Although the UCLA Fleet would minimally interact with such a system, the EMV technology would allow for even greater access to the general public, resulting in even more use of the CNG station. The new EMV technology upgrade would cost an estimated $13,000, which includes the additional wiring, permitting, and labor expenses to complete, acquire, and employ.

SCAQMD will continue to explore opportunities to support and fund natural gas fuel projects, as a strong network of publicly accessible infrastructure will help to support the capacity of CNG as an alternative fuel in the South Coast Air Basin. At present, natural gas is the cleanest available fossil fuel technology and provides its users and the communities in which they travel with improved air quality via reduced tailpipe emissions.

[1] *Gallons of gasoline equivalent*

Upgrade Existing LNG Facility to L/CNG at Riverside County Waste Management's Agua Mansa Facility

Contractor
Clean Energy Fuels

Cosponsor
SCAQMD
Clean Energy Fuels

Project Officer
Larry Watkins/Phil Barroca

Background

The SCAQMD awarded Clean Energy Fuels $120,000 in funding to help offset a percentage of the cost to add public access CNG fueling to the County of Riverside's existing LNG fueling station located at 1830 Agua Mansa Road, Riverside, California.

Project Objective

The work to be accomplished under this award was to provide equipment funding to help offset a percentage of the capital costs incurred for a new public access compressed natural gas (CNG) fueling facility to fill an existing current gap in infrastructure in the Inland Empire region of the South Coast Air Basin. Accessible CNG fueling did not exist on the route 60 corridor between the City of Riverside and Ontario International Airport (ONT).

Technology Description

CNG station construction included the installation of a 6 GPM L/CNG pump; 3 storage vessels each with a nominal capacity of 9,400; a 3,600 psi dispenser; a priority panel and all other required station components.

Status

Station construction commenced July 2010. Station start-up processes occurred in early February 2011 and included the fueling of test vehicles. The station was commissioned and became fully operational by the end of February 2011. The completed facility meets all required codes and passed a Fire Marshall Safety Inspection prior to the public opening.



Figure 1: Upgraded Agua Mansa L/CNG Station



Figure 2: CNG Dispenser installed at Agua Mansa LNG Station

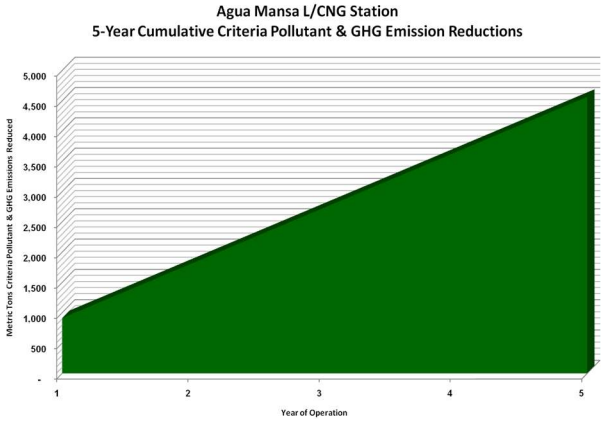
Results

The new County of Riverside CNG station fills a critical gap in the Southern California CNG network. Clean Energy successfully completed the upgrade of the County of Riverside's existing LNG fueling station to provide a public access CNG station. The new public access CNG station meets the specifications outlined in the award agreement and is now open 24-hours per day, 7-days a week. This contract included an annual throughput requirement of 750,975 gasoline gallon equivalents (GGEs) of natural gas by the end of the third full year of operation. As the table below shows, this throughput was met in the second year.

Five-Year Throughput Data			
Year	CNG Dispensed	LNG Dispensed	Total GGE Dispensed
2011	264,040	403,927	667,967
2012	475,367	385,783	861,150
2013	520,751	430,570	951,321
2014	718,252	498,125	1,216,377
2015	718,933	388,108	1,107,041

Benefits

Fueling infrastructure does not provide emission reduction benefits or improved air quality on its own; rather, those benefits are achieved from the natural gas vehicles that fuel at reliable stations such as this. This contract included an annual throughput requirement of 750,975 gasoline gallon equivalents (GGEs) of natural gas by the end of the third full year of operation. Based on this usage, the station would reduce more than 913 metric tons of criteria pollutant & greenhouse gas emissions per year, a total of 4,565 metric tons of criteria pollutant & greenhouse gas emissions would be reduced over a 5-year project life.[1]



Project Costs

The total project cost of the CNG public access upgrade was $535,457. The $120,000 contributed by the SCAQMD represented 22% of the total budget. Clean Energy Fuels provided the remaining capital of $415,457.

Conclusions

The LNG station was effectively upgraded to include a public access CNG station, establishing a vital link in local-area alternative fuel infrastructure.

[1] Emissions reductions were determined utilizing the Clean Cities Area of Interest 4: Alternative Fuel and Advanced Technology Vehicles Pilot Program Emissions Benefits Tool. Assumptions: annual fuel throughput based on commitments included in the original grant proposal; Heavy Duty vehicles=282,975 GGE/year & Light Duty Vehicles=468,000 GGE/year; HDV MPG= 6MPG & LD MP=15 MPG.

SCAQMD Contract #06091 **December 2016**

Purchase and Install New Public Access CNG Fueling Station at City Yard

Contractor
City of Whittier

Cosponsors
SCAQMD
MSRC/AB2766 Discretionary Fund
City of Whittier

Project Officer
Larry Watkins/Phil Barroca

Background

In 2001, the SCAQMD and the California Air Resources Board began to adopt regulations that require public agencies to embark on effectively reducing vehicle PM and NOx emissions.

These regulations prompted the City of Whittier staff to explore the alternative fuel market and the City initiated a work plan to transition its incoming fleet to clean CNG-fueled vehicles.

Project Objective

The objective of this project was to construct a limited-access facility to support clean natural gas powered vehicles and equipment for the City, complying with the regulations while maintaining services for fueling the general public and other fleets in the area, and to promote the use of alternative fuels.

Technology Description

When the City of Whittier began to explore the alternative fuel market, natural gas was recognized as the most economical alternative fuel in this region.

Utilizing natural gas, the City is able to significantly lower its vehicle emission levels while maintaining public service levels, lower overall fuel costs, and lower its dependence on imported oil.

Status

On December 11, 2007, the Whittier City Council approved awarding the construction contract to Allsup Corporation. The entire authorized amount for the station project, including construction, inspection, permitting and contingency was $789,790. Construction began on July 22, 2008 and was completed on November 1, 2008.



Figure 1: Compressor Compound



Figure 2: Time Fill Posts

Because throughput was lower than projected at three years, the five-year period of annual reporting was extended by three years for a total of eight years, ending in 2016.

Results

Concurrent with station construction, the City of Whittier had replaced seven heavy-duty refuse collection trucks (44% of its refuse fleet), one street sweeper, and three light-duty pickup trucks. By replacing those vehicles, the City reduced NOx emissions by more than 2.1 tons and diesel PM was also reduced. The City had also submitted procurements for two heavy-duty refuse collection trucks.

Benefits

The following table reflecting throughput demonstrates displacement of diesel fuel, further reducing both NOx and PM.

Period	Throughput (in Therms)
12/1/08-11/30/09	63,342
12/1/09-11/30/10	66,844
12/1/10-11/30/11	70,407
12/1/11-11/30/12	75,857
12/1/12-11/30/13	80,853
12/1/13-11/30/14	91,012
12/1/14-11/30/15	101,895
12/1/15-11/30/16	76,419

On July 1, 2016 the City of Whittier out-sourced its Solid Waste Collection services, which had an impact on the CNG station load (throughput). Regardless, the City of Whittier continues to replace diesel-powered vehicles with CNG-powered vehicles.

Project Costs

Total project costs and funding sources were as follows:

Source	Amount
City of Whittier	$497,789
MSRC/AB 2766 Discretionary Fund	$83,333
SCAQMD	$150,000
Total	**$731,122**

Commercialization and Applications

The City of Whittier has been transitioning turnover of its heavy-duty diesel vehicle fleet to vehicles which operate by cleaner compressed natural gas (CNG) and a large component of this conversion has been the vehicle refueling station. The City experienced a longer construction time than anticipated presenting the station construction contractor with the, "Notice to Proceed" on January 1, 2008 and finishing almost a year later. The busy station construction market may indicate the use of natural gas, as a vehicle fuel, is becoming more prevalent.

The City plans to operate this facility for many years converting all 43 heavy-duty City trucks to CNG and plans to expand this facility within the next 5 to 6 years. The City also has oral agreements with other fleets to allow access to the station and is working to set up accounts for them, increasing throughput to the station.

The City's largest obstacle, currently, is vehicle and engine manufacturers not producing OEM CNG vehicle products consistently. Ford was producing light-duty CNG powered vehicles and stopped. Larger truck manufacturers such as Sterling, Detroit Diesel, and John Deere have stopped production. With the use of natural gas becoming more popular and more refueling stations being available, if manufacturers could produce more vehicles, state governments, municipalities, and the general public would be more likely to use these vehicles, emission levels would drop, and the state could lower its dependence on imported oil.

SCAQMD Contract #07153 **June 2016**

Purchase and Install New Public Access CNG Fueling Station in Irwindale

Contractor
Foothill Transit

Cosponsors
Clean Energy
SCAQMD

Project Officer
Larry Watkins/Phil Barroca

Background

The SCAQMD awarded Foothill Transit $250,000 in funding to help offset a percentage of the cost to add a public access CNG fueling station on Foothill Transit's property located at 5640 Peck Road, Irwindale, California.

Project Objective

The work to be accomplished under this contract was to provide equipment funding to help offset a percentage of the capital costs incurred for a new public access CNG fueling facility. The station will provide a source of fuel for natural gas vehicles traveling throughout the area as well as along the 10, 60, 605 and 210 Freeways.

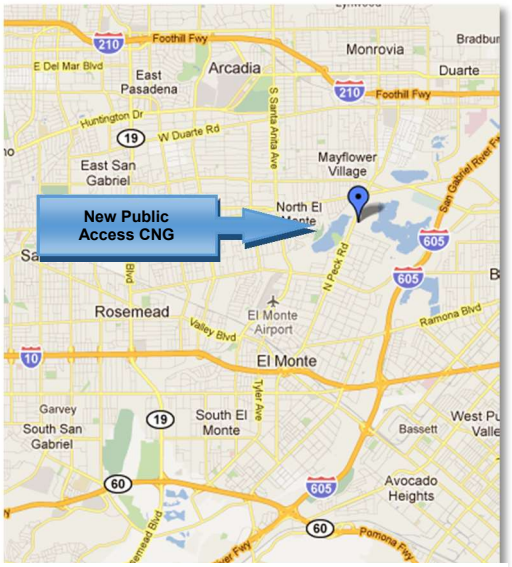


Figure 1: Station Location Near Multiple Freeways

Technology Description

The CNG tation consists of the following components: 5 IMW compressors, 66,000 SCF (standard cubic feet) of ASME American Society of Mechanical Engineers) high-pressure storage vessels, 1 dual hose dispenser and a regenerative dryer capable of meeting SAE standard J1616 moisture requirements. Station start-up processes occurred in July and included the fueling of test vehicles. The completed facility meets all required codes and passed a Fire Marshall Safety Inspection prior to the public opening.

Status

The station was commissioned in July 2011. The new public access CNG station meets the specifications outlined in the contract and is now open 24-hours per day, 7-days a week.



Figure 2: Foothill Transit CNG Station

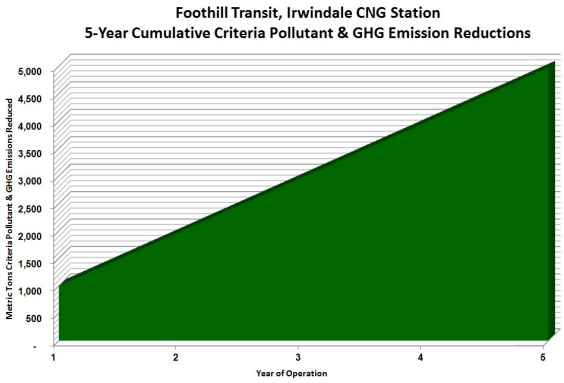
Results

Below are throughput results in gasoline-gallon equivalents (GGEs) for the five years of reporting required under this contract through mid-2016.

Period	Throughput (GGEs)
7/1/11-6/30/12	3,361,679
7/1/12-6/30/13	5,053,531
7/1/13-6/30/14	5,503,938
7/1/14-6/30/15	6,051,595
7/1/15-6/30/16	6,156,746

Benefits

Fueling infrastructure does not provide emission reduction benefits or improved air quality on its own; rather, those benefits are achieved from the natural gas vehicles that fuel at reliable stations such as this. The projected annual throughput in the proposal by the end of the third full year of operation was 900,000 GGEs of natural gas. Based on this use, this station would have reduce more than 995 metric tons of criteria pollutant & greenhouse gas emissions per year, a total of 4,976 metric tons of criteria pollutant and GHGs would be reduced over a five-year project life. This was determined using the Clean Cities Area of Interest 4: Alternative Fuel and Advanced Technology Vehicles Pilot Program Emissions Benefits Tool, and assuming annual fuel throughput based on projections included in the original proposal: heavy-duty vehicles (6 mpg) equal to 405,000 GGE/year and light-duty vehicles (15 mpg) equal to 495,000 GGE/year.



The station fell below this projected throughput during the five years of reporting so while the benefits are not as significant they are still considerable.

Project Costs

The total project cost of the CNG station was over $3 million. The $250,000 contributed by the SCAQMD represents 22% of the total cost. Clean Energy provided the remaining capital required to complete the station, including the required cost-share of $909,798.

Commercialization and Applications

The station has filled a critical gap in the southern California CNG fueling network.

SCAQMD Contract #07320 **March 2016**

Install New CNG Refueling Station in the City Of Santa Ana

Contractor
Orange County Transportation Authority (OCTA)

Cosponsors
Mobile Source Air Pollution Reduction Review Committee (MSRC) AB 2766 Discretionary Fund
OCTA/Local Transportation Funds
SCAQMD

Project Officer
Larry Watkins/Phil Barroca

Background

In an effort to fulfill the Orange County Transportation Authority mission of overseeing integrated bus, commuter rail and paratransit operations while also improving air quality OCTA has decided to move toward the utilization of clean fuels. In this regard, a decision was made that all new fixed-route buses would be fueled with compressed natural gas (CNG). Liquefied natural gas (LNG) was the clean fuel of choice for OCTA since 1998, but the decision was made to switch all new bus purchases to CNG. CNG is more common in the industry and continued fuel delivery problems with LNG have made this the best choice. In order to accommodate the use of CNG buses, CNG fueling facilities are required at some or all of OCTA's bus bases.

Project Objective

OCTA's objective was to construct and operate a new CNG fueling station at the Santa Ana bus base, located at 4301 W. MacArthur Boulevard, Santa Ana, CA 92704. The planned station would be able to fuel 4 buses simultaneously, each with 8,500 SCF of CNG within 5 minutes of connected fueling time. The station would utilize four single-hose CNG dispensers for high-capacity fast-fill bus fueling to 3,600 psi and one two-hose dispenser for light-duty fast-fill fueling with a 3,000 psi hose and a 3,600 psi hose.

The CNG fueling station was designed to be capable of providing an estimated 2.5 million therms of throughput during the first year of operation, increasing to a throughput of 4.5 million therms in the fourth and fifth years of operation. The CNG fueling facility was designed to support a fleet of 250 CNG buses. Trillium was chosen as the contractor to perform the work.

Technology Description

OCTA's CNG fueling station relies on reciprocating compressors fed by pipeline natural gas; specifically four Ariel JGR/4 compressors. All gas is conditioned by a twin-tower, fully automatic, heat-reactivated natural gas dryer before being introduced to the compressors. The compressed gas is stored in four 10,000 SCF storage spheres at up to 4,500 psi. A Sierra Monitor Sentry gas detection system was installed utilizing infra-red sensors to verify that gas leaks do not exist and sound an alarm if one occurs.

Status

Station commissioning was completed in February 2008, with five years of reporting required under the SCAQMD contract. Major construction was complete by February 2007. Performance testing was delayed due to delays in receiving buses. Performance testing occurred by October 2007, but issues arose due to water in the gas. A water

main pipeline break two miles from the project site caused a natural gas pipeline failure and introduced water into the gas. The Southern California Gas Company resolved the problem and dried out the pipeline so that a successful performance test could be accomplished in February 2008.



Figure 1: Single-Hose CNG Dispensers

Results

As of October 2008, there were about 170 CNG buses operating from this location; these replace 10-20 year old diesel transit buses. On average, a 75% reduction in oxides of nitrogen was accomplished. The CNG fueling station is necessary to fuel the buses on schedule.

During the first year of operation – July 2007 through June 2008 - the fuel throughput was 1,490,274 therms. Fueling in 2007 started with five CNG buses and by June 2008 120-140 buses were being fueled. Throughput at three years had been projected at 4,000,000 therms annually but was adjusted to an anticipated 3,000,000 therms. The reduced throughput was likely due to economic conditions and resulting budgetary constraints for both OCTA and surrounding agencies which would have been using the station. As a result, the SCAQMD required three additional years of reporting through 2016. The following table shows the actual usage for Calendar Years 2011-2016.

Table 1: Throughput CY 2011-2016

CY	Therms
2011	3,247,063
2012	2,816,738
2013	2,424,761
2014	2,619,743
2015	3,297,420
2016	3,480,544

Benefits

This CNG fueling station was designed to allow the OCTA to operate up to 250 CNG buses. Those CNG buses are replacing older diesel buses having at least 4 g/bhp-hr NOx emissions. These buses travel about 50,000 miles per year. Currently, about 170 CNG buses operate out of this location. There is a 75% average reduction in the NOx emissions for buses operating out of this location due to the CNG buses replacing diesel buses.

Project Costs

Total project costs were $6,534,274. The SCAQMD provided a $1,000,000 cost-share and the MSRC provided a $200,000 cost-share. The project cost was within the budgeted amount. The remainder of the project was funded through local transportation funds.

Commercialization and Applications

OCTA moved to alternative fuels to do their part to improve air quality. OCTA's experience with the CNG station at Santa Ana encouraged it to continue with the use of CNG and install stations at the Garden Grove, Anaheim and Irvine bus bases. OCTA's experience can be duplicated and shared with others to save on fuel costs, help improve the environment and further safeguard public health.

SCAQMD Contract #08043 **December 2016**

Public Access CNG Fueling Station Upgrade for UCLA Transportation

Contractors
University of California Los Angeles
Clean Energy Fuels (subcontractor)

Cosponsors
Clean Energy Fuels
SCAQMD
UCLA

Project Officer
Larry Watkins/Phil Barroca

Background

The University of California Los Angeles (UCLA) was an early adopter of compressed natural gas (CNG) as a fleet fuel. The station selected for upgrade under the terms of Contract #08043 was a first-generation system, installed in 1993. The original set-up of the station included public use; however, its primary user was the UCLA fleet.

Project Objective

UCLA now operates 62 CNG fleet vehicles, including 14 CNG campus shuttle buses. To meet growing fuel demands of the UCLA fleet and public users, the facility, which is located at 741 Charles Young Drive on the UCLA campus, required a system upgrade. The proposed upgrade would bring this first-generation system to the fueling capacity and reliability level found in the state-of-the-art CNG systems installed today. Clean Energy Fuels was chosen as UCLA's general contractor.



Figure 1: Compressor with Catwalk

Technology Description

Station construction included the installation of a Greenfield compressor with a minimum capacity of 175 SCFM, a 4500 psi storage vessel, a split priority panel, an automated Greenfield video dispenser and a catwalk around the compressor enclosure. Station start-up processes occurred in early August 2008 and included the fueling of test vehicles.

The completed facility met all required regulatory codes and passed a Fire Marshall safety inspection prior to the public opening.



Figure 2: Station Fueling Ports

Status

Station construction commenced in May 2008. A Grand Opening was held on August 28, 2008. A report was submitted to the SCAQMD for consideration in late 2008, but projected throughput was higher than actual gallons dispensed. As a result, the five-year period of annual reporting was extended by three years for a total of eight years, ending in 2016.

Results

Fueling infrastructure does not provide emission reduction benefits or improved air quality on its own; rather, benefits are achieved from the natural gas vehicles that fuel at reliable stations such as this. The UCLA CNG station provides the UCLA fleet and private West Los Angeles users with a reliable source of fuel for their vehicles.

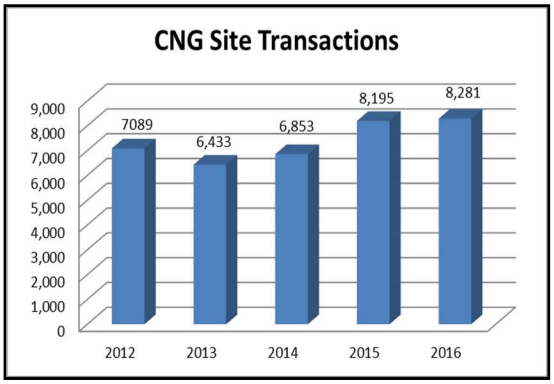


Figure 1: Throughput in GGEs[1] from 2012-2016

We believe this project to have been a success as the station was effectively upgraded from its original first-generation equipment to new state-of-the-art equipment. In 2016, the UCLA site averaged 690 transactions per month, the highest number ever recorded. The facility is technically capable of reaching the throughput requirement of an estimated 920 transactions per month and 150,000 GGE annually.

Benefits

Since completion of the facility upgrade, the UCLA station has displaced an average of 2,500 gallons of petroleum-based fuel (GGEs) per month.

Clean Energy provides its customers with turn-key solutions for natural gas transportation fuel. As a result, station construction and upgrade is able to be standardized.

Project Costs

At the time of contracting, the project budget was estimated at $318,158 with the SCAQMD to contribute $140,000, or 40% of the project cost. At the close of construction, the total project cost was $335,353. The $140,000 contributed by the SCAQMD represented 35% of the total budget. Clean Energy provided cost-share totaling $154,262 with the remaining budget paid by UCLA.

Commercialization and Applications

Compressed natural gas as a vehicle fuel is commercially available on a limited basis throughout the South Coast Air Basin. This project expanded the fueling capacity of an existing CNG station to allow greater user access, thus expanding the viability of this alternative fuel in the West Los Angeles area.

SCAQMD will continue to explore opportunities to support and fund natural gas fuel projects, as a strong network of publicly accessible infrastructure will help to support the capacity of CNG as an alternative fuel in the South Coast Air Basin. At present, natural gas is the cleanest available fossil fuel technology and provides its users and the communities in which they travel with improved air quality via reduced tailpipe emissions.

[1] *Gallons of gasoline equivalent*

SCAQMD Contract #08044 **December 2016**

Install Limited-Access CNG Refueling Station

Contractors

Beaumont Unified School District
Gas Equipment Systems, Inc.
Bogh Construction, Inc.
WLC Construction Services, Inc.
Elrod Fence Company
Southern California Gas Company

Cosponsors

City of Beaumont
SCAQMD

Project Officer

Larry Watkins/Phil Barroca

Background

The City of Beaumont and Beaumont USD explored all avenues available to them in order to meet regulations for public agencies to reduce vehicle PM and NOx emissions. In June of 2004 the City received a grant award in the amount of $150,000 from SCAQMD to construct a CNG fueling station. Due to circumstances beyond their control, the property allotted proved unsuitable for this purpose. Meanwhile, Beaumont USD had been researching ways to reduce PM and NOx emissions produced by their student transport buses.

Project Objective

The primary objective of this project was to construct a CNG fueling station on Beaumont USD's property to provide time-fill refueling to their current and growing fleet of CNG school buses overnight. A key objective was to also accommodate the City, other local entities with fleets of CNG vehicles, and the general public's CNG fueling needs. This meant there was a need to provide general access to the CNG station 24-hours a day, 7-days a week without adding personnel costs to the School District. Adding a card reader to the fast-fill station was added to the objectives.

Technology Description

The following equipment was installed as part of this project:

- (1) Gardner Denver CNG compressor skid
- (1) desiccant absorber gas dryer, Xebec, PST or equal
- (1) 3 band CNG storage units
- (1) fast-fill dispenser
- (1) card reader
- (1) high-pressure filter assembly
- (1) dome load-priority panel
- (8) GESI single hose time-fill assemblies with vented valves and NGVI Type II P36 fill nozzles.

Status

On September 25, 2007, Beaumont USD's Board of Trustees approved an award to Gas Equipment Systems, Inc. to provide services and equipment for the CNG fueling station. Construction began October 1, 2007 and was completed on August 12, 2008. The CNG Fueling station project was completed and opened to the public on September 8, 2008. The card reader allowed users to easily utilize the



Figure 1: Time-Fill Posts Allows Beaumont USD to Fill 8 Buses Overnight

station using major credit cards including MasterCard, Visa, Voyager and Wright, as well as ATM cards that have the Visa or MasterCard logo. Initial throughput for the new CNG

station from August 2008 through February 2009 was 16,943 units.

Projected throughput was higher than actual gallons dispensed. As a result, the five-year period of annual reporting was extended by three years for a total of eight years, ending in 2016.

Results

The addition of a CNG fueling station in Beaumont has helped to decrease emissions and also assists the region collectively to reduce dependence on imported oil. The district has seen financial savings in the cost of natural gas vs. diesel expenditures. Beaumont USD was able to take advantage of labor savings by utilizing the onsite overnight time-fill stations instead of having staff drive the CNG vehicles outside of the City and wait while the tanks fill. Additionally, they no longer pay a markup to another fuel facility and are eligible for the IRS fuel rebate.

Throughput in the first five years of station construction continued to grow. The following table reflects throughput in CNG therms and diesel-gallon equipment (DGEs) or diesel gallons displaced by CNG.

Table 1: Throughput 2008-2013

Period (Jul-Jun)	CNG Therms	DGE
2008-09	28,534	22,848
2009-10	32,882	26,329
2010-11	45,194	36,188
2011-12	54,411	43,569
2012-13	46,564	37,285
2013-14	62,195	49,800
2014-15	67,336	53,917
2015-16	61,761	49,453

Benefits

The District has put in place a plan to replace their older diesel-burning buses with cleaner burning CNG buses in spite of budget restraints. Moving to CNG-fueled school buses will significantly reduce NOx, PM, and air toxic emissions, contributing to overall cleaner air for the region.



Figure 2: Beaumont USD's Public Dispenser

Project Costs

Total construction costs were as follows:

Construction Costs	
Gas Equipment Systems, Inc.	$492,098
Bogh Construction, Inc.	$109,294
WLC Construction Services, Inc.	$66,016
Elrod Fence Company	$6,723
Southern California Gas Co.	$11,703
Total	$685,833

Funding was provided by the SCAQMD in the amount of $150,000, with the MSRC/AB 2766 Discretionary Fund Program providing $288,000. Beaumont USD through its Capital Outlay Fund paid the remaining costs of $247,833.

Commercialization and Applications

Beaumont USD plans to operate this facility for many years and has put in place a plan to convert their heavy-duty diesel vehicles to cleaner burning CNG buses when funding allows. They anticipate that as natural gas use becomes more familiar, manufacturers will meet the needs of the public and produce more vehicles that consume this cleaner-burning fuel. When this happens, it will allow the school district and other entities to additionally replace their fleet of small trucks and utility vehicles with cleaner-burning vehicles.

SCAQMD Contracts #09218 and 10067 **December 2016**

Install Mountain Safety Equipment on CNG School Buses

Contractor
Rim of the World Unified School District

Cosponsors
SCAQMD

Project Officer
Ranji George

Background

Using funding authorized by Proposition 1B, SCAQMD provided significant incentives to school districts to replace their old, higher-polluting school buses with new, primarily CNG, school buses. Rim of the World Unified School District was one of the grantees under this Program. Using SCAQMD's school bus grant funds, Rim of the World USD purchased 11 new CNG buses through manufacturer BlueBird's local distributor, AZ Bus Sales. Rim of the World USD operates its buses on challenging mountain roads and under severe weather conditions, at elevations that reach as high as 4,500 to 6,000 feet above sea level. Areas served by Rim of the World USD include Crestline, Lake Arrowhead, Running Springs and Green Valley Lake communities.

Project Objective

In addition to providing new CNG school buses, SCAQMD used the Clean Fuels Program to provide funding for the installation of mountain safety equipment to enhance the safety and reliability of these new CNG buses. The new equipment was to enable the school district to operate these new buses safely on mountain roads.

Technology Description

The proposed safety equipment for the new school buses assists in helping improve traction, braking and visibility during driving. This is essential for school buses operating on steep mountain roads and curves, especially winter weather conditions which may result in ice and/or snow on the road.

The following specialized equipment was installed on these buses under these two school bus grants:

a) Allison 3000 PTS Transmission with Retarder
b) Rear Air Ride Suspension
c) 10 inch Air Brakes ILO Standard
d) Electric Air Drain Valves ILO Manual
e) Heated Remote Mirrors ILO Heated only
f) Additional Floor Mounted Heater
g) Strobe Light with Pilot
h) Fog Light Front Bumper
i) Stainless Steel Step Well
j) Sanders
k) Block Heater



Figure 1: Type D CNG bus purchased by Rim of the World

Status

The 11 new CNG buses awarded by SCAQMD were equipped with the above special safety equipment in 2011 and were required to operate and report for a minimum of five years under these grants. Currently, all 11 new CNG buses are still operating with the mountain safety equipment, reducing potential for hazards involved in driving school buses at high elevations.

Results

This new equipment has enabled the school district to successfully operate their new CNG school buses safely for several years.

Benefits

New CNG buses emit dramatically reduced air pollutants (NOx, PM, air toxics) relative to the old diesel school buses that were replaced (models 2006 and earlier). The equipment installed in each bus considerably enhanced the safety and operability of the new buses at high elevations.

Project Costs

The cost of the safety additions per bus was on average $13,170 for a total of $144,870 provided by the Clean Fuels Program.

Commercialization and Applications

Installation of this mountain safety equipment ensured that Rim of the World USD would continue on a path to using alternative fuel school buses, thereby reducing toxic diesel pollutants, especially exposure to young people, who are far more susceptible to the adverse health risks of poor air quality.

SCAQMD Contract #13401 **May 2016**

Demonstrate Natural Gas-Powered Parking Lot Sweepers

Contractor
Nite-Hawk Sweepers, LLC

Cosponsors
GoNatural CNG
Haaker Equipment
Isuzu
Nite-Hawk Sweepers, LLC
Pro-Sales
SCAQMD

Project Officer
Phil Barroca

Background
The parking lot sweeper population in the SCAQMD jurisdiction is estimated between 500-700 vehicles. In addition, there are an estimated 100+ private fleet operators providing sweeping services in locations such as retail shopping centers, office parks, shopping malls, school/university campuses and communities overseen by residential homeowner associations. Parking lot sweeper (PLS) vehicles range from converted light- and medium-duty pickup trucks to more sophisticated and purposefully designed vehicles. These vehicles fill a niche not covered by larger more robust, heavy-duty, street sweeping vehicles which are regulated under the SCAQMD Fleet Rule 1186.1. PLS vehicles can accrue as many as 60,000 miles annually and are powered by conventional fuel (gasoline or diesel) engines, representing a significant amount of emissions in this region. In December 2012, the SCAQMD Board awarded up to $90,000 from the Clean Fuels Fund to Nite-Hawk Sweepers, LLC, based in Seattle, WA, based on their proposal to develop and demonstrate a CNG-powered PLS vehicle. Nite-Hawk develops and markets specially designed street sweepers such as the Osprey and Raptor sweepers. The CNG PLS in this project is based on the Raptor design.

Project Objective
Diesel and gasoline-powered parking lot sweepers (PLS) are widely used to clean parking lots in retail shopping centers, office parks, multi-level parking garages, and similar locations. The implementation of new alternative fuel-powered PLS vehicles in public and private fleets that provide such services could generate important emission reductions and reduce exposure to toxic diesel particulate emissions for residents residing near locations where these vehicles are utilized. This project demonstrates a CNG-powered prototype parking lot sweeper that is based on the Raptor sweeper designed and built by Nite-Hawk. The vehicle uses an Isuzu NPR-HD chassis and is powered by a dedicated CNG-powered GM 6.0L spark-ignited V8 engine using a CARB-certified CNG conversion system. The vehicle is designed to hold up to 60 GGE of onboard CNG fuel. The project objective is expected to result in the commercial availability of a dedicated CNG-powered parking lot sweeper vehicle and to provide greater awareness of alternative fuel powered vehicles to a customer base accustomed to conventional fueled vehicles.

Technology Description
The CNG powered PLS vehicle uses a GM spark-ignited 6.0L gasoline engine converted to operate on CNG. A factory installed Engine Control Unit (ECU) monitors various engine sensors and controls engine operations with various actuators. Engine performance is optimized by using CNG's high octane rating and increasing the air/fuel ratio from 14.7:1 (stoichiometric) to 17.2:1 (lean burn). The CNG version is 30% lower in NOx emissions relative to the gasoline version and the lean-fuel mixture provides greater fuel economy.



Figure 1: CNG Nite-Hawk Raptor Edge

Status

Nite-Hawk successfully developed, demonstrated and deployed, in the South Coast Air Basin, a CNG-powered parking lot sweeper vehicle. The now commercially available PLS vehicle is built on an Isuzu NPR-HD chassis rated at 14,500-lbs GVWR and is powered by a GM 6.0L V8 engine converted to CNG-power with a CARB-certified system by Greenkraft (Santa Ana, CA). The vehicle's body is Nite-Hawk's Raptor Edge. Engineering included relocating (and redesigning) the toolbox from the center to the back of the chassis and placing the CNG tanks at center chassis. The vehicle comes with two CNG fuel capacity options: 30 GGE in a single tank or 60 GGE with two identical 30 GGE tanks. The CNG tanks are Type 4 composite cylinders.

The original project called for the development of a medium-duty, CNG-powered PLS on an Isuzu chassis with the Raptor body. Nite-Hawk solicited GoNatural CNG to develop the CNG conversion system and achieve CARB certification. Shortly after completing development of the prototype PLS and commencing demonstration in California in February 2014, GoNatural CNG ceased support of the project and subsequently closed business.[1] Nite-Hawk, unable to find a company to continue these efforts decided to use Greenkraft's CARB-certified CNG conversion system for the 6.0L GM engine in an Isuzu NPR heavy-duty chassis.

Results

The dedicated CNG-powered parking lot sweeper was demonstrated to 21 public or municipal based entities through Haaker Equipment Company, and 15 private sweeping contractors through Pro-Sales Group, Inc. between 2014 and 2016. The vehicle was deployed at airports, apartment complexes, condominium parking lots, construction sites, fairgrounds, streets, parking lots, parks, paths, and shopping centers. Participants found no difference from using a gasoline-powered sweeper and found no performance deficiencies. A common concern was sufficient access to CNG refueling infrastructure. The overall response of the participants to the CNG PLS was favorable.

The CNG PLS accrued over 14,000 miles over a two-year demonstration period with each participant driving the vehicle from 150 to 1000 miles; the average demonstration was 400 miles. A total of 2,060 GGE was consumed; the miles per GGE ranged from 5 to 9.3; the overall average fuel economy was 6.75 miles/GGE. Nite-Hawk reports that a comparably equipped and powered gasoline version has an average fuel economy of 5.7 miles per gallon. On average, a Raptor PLS accrues 36,500 miles and has a 5 to 10 year lifespan. Regional fuel prices during the 2014-2016 CNG PLS demonstration averaged $2.17/GGE for CNG and $2.93/gallon for gasoline. Nite-Hawk estimates that $1,565 in fuel savings was realized from CNG refueling in this demonstration period.

Benefits

Relative to its gasoline-powered counterpart, the CNG version of this vehicle is nearly 50% cleaner in non-methane hydrocarbon + oxides of nitrogen emissions based on CARB certification values. The use of renewable natural gas would greatly reduce GHG impacts associated with vehicle operation as well as displace the use of petroleum-based fuels. The full benefits of this program are yet to be determined.

Project Costs

Total cost for this project was, as projected, $200,000. SCAQMD's contribution from the Clean Fuels Fund was $90,000. Additional in-kind contributions were provided for vehicle leasing, upfits, engineering and CNG conversion as well as the two-year demonstration of the vehicle in the South Coast Air Basin.

Commercialization and Applications

The dedicated CNG-powered Nite-Hawk Raptor Edge Parking Lot Sweeper became commercially available in California in 2014. The 2017 vehicle price differential is $28,000-$33,000 greater for the CNG model relative to the gasoline model (less incentives). California sales include City of Palm Springs Airport, Port of San Diego, and City of Exeter. Prospective sales inquirers include Waste Management, Los Angeles, CA and Los Angeles International Airport.

[1] *Following 2013, no manufacturer certified with CARB a dedicated CNG system for a medium-duty 6.0L GM engine in a medium-duty Isuzu chassis.*

SCAQMD Contract #13402 **July 2016**

Cost-Share Next Sustainable Transportation Energy Pathways (STEPs) Program

Contractor
UC Davis Institute of Transportation Studies

Cosponsors
7 energy providers
9 automakers
6 Public agencies

Project Officer
Lisa Mirisola

Background

NextSTEPS (Sustainable Transportation Energy Pathways) was a four-year (2011-2014), multidisciplinary research consortium at the UC Davis Institute of Transportation Studies. The mission was to generate new insights about the transitions to a sustainable transportation energy future and disseminate that knowledge to decision-makers in the private sector and governmental agencies so that they can make informed technology, investment, and policy choices.

NextSTEPS researchers developed the theory, tools and methods that allow for self-consistent and transparent comparisons of promising alternative energy and vehicle pathways and development of realistic integrative scenarios toward sustainable transportation goals. The NextSTEPS program followed previous UC Davis Institute of Transportation Studies (ITS-Davis) consortium-based research programs on Fuel Cell Vehicle Modeling (1998-2002), Hydrogen Pathways (2003-2006) and Sustainable Transportation Energy Pathways (STEPS) (2007-2010).

Over 200 research publications and reports produced by NextSTEPS researchers are currently available to the public at the following link www.steps.its.ucdavis.edu.

Project Objective

The NextSTEPS Program had input from a team of multi-disciplinary researchers and support from energy companies, automotive manufacturers and government agencies. NextSTEPS analyses include a focus on Southern California as the early market for alternative fueled vehicles, specifically hydrogen fuel cells, plug-in hybrid and battery electric vehicles.

Four specific STEPS projects are described below that have direct relevance to SCAQMD.

Project 1-Transition Scenarios for Alternative Fuels and Vehicles in California (Project # NS86)

NextSTEPS provided stakeholders with two overarching research updates on scenarios and transition strategies of the planned and potential rollouts of alternative vehicles and fuels in California, in order to help inform investment decisions.

NextSTEPS researchers looked at transitions for several types of fuels and vehicles:

Hydrogen - Adoption of H2 fuel cell vehicles is being spurred by new regional stakeholder partnerships, coordinating rollout of vehicles and stations. NextSTEPS transition models show that H2 infrastructure design, economics and consumer utility are improved by "cluster strategy," co-locating early adopters and early stations.

Biofuels – "Incremental" and "Transitional" biofuel investments show the most potential currently (for example, improved corn ethanol technology); "Leapfrog" technologies

(biomass gasification, cellulosic ethanol) are still important for the long term.

Project 2- Consumer Behavior & Vehicle Choice: Longitudinal Tracking Study (Project #NS38)
NextSTEPS provided critical data on consumer perceptions and use of light-duty alternative vehicles over time, which can be used as input to develop strategies for market growth and infrastructure development. Ultimately, the management tools recommended by this study can inform forecasts of transportation fuel demand, retail fuel prices, and shifts in fuel types and vehicle types for stakeholders including the California Energy Commission.

Analysis of early plug-in electric vehicle markets and conditions for growth: Case studies of California and Norway show that the market starts in pockets, loosely characterized as urban, affluent, educated, techies. Public infrastructure is important for growth. A study of California dealers shows that dealers are integral but overlooked in selling PEVs.

Project 3-Best Policy and Incentive Strategies (Project #NS88)
NextSTEPS advised stakeholders on possible policy tools to address goals and to spur the successful early-stage development of alternative vehicles and fuels.

The ITS CA-TIMES energy/economic model was developed by STEPS researchers Sonia Yeh and Chris Yang to explore the prospects for future transportation fuels in California. They found a range of scenarios that enabled deep cuts in GHG emissions (60-80% by 2050), characterized by improved vehicle efficiency, lower carbon fuels, electricity and H2, and overall reductions in energy demand.

Project 4- Low Carbon Options for Non-Light Duty Vehicle (LDV) Subsectors (NS28)
NextSTEPS shall assess low-carbon options for all non-light duty vehicle (non-LDV) subsectors (trucks, buses, rail, marine, and aviation), to help stakeholders evaluate options for AB 118 funding for non-LDV transportation subsectors.

Natural Gas - Abundant natural gas is changing the economics of alternative fuels and opening new opportunities in the U.S. medium/heavy duty trucking sectors.

Status

The NextSTEPS Program, including the four projects listed above, was completed in December 2014.

Results

From 2011 to 2014, NextSTEPS researchers produced over 208 major publications and journal articles as well as numerous research reports. In addition, the Program held 16 symposia, sponsor meetings, and policymaker outreach events in California and Washington D.C. The STEPS website (www.steps.ucdavis.edu) hosts electronic copies of selected publications and other program materials.

Benefits

The NextSTEPS Program, and especially the four projects highlighted above focusing on zero emission vehicles and low-carbon fuels, have a direct relevance to SCAQMD's priorities in evaluating changes to criteria emission levels and vehicle technology options.

Project Costs

SCAQMD contributed $120,000 toward the NextSTEPS Program for 2013 and 2014. The NextSTEPS Program was supported by other industry and government sponsorships and contracts, and the total support was over $6 million over the length of the NextSTEPS Program (2011-2014).

Commercialization and Applications

In addition, outreach and communication of results from the NextSTEPS Program will broaden the public knowledge base and help expedite introduction of zero and near-zero emitting vehicles in the South Coast Basin.

SCAQMD Contract #10723 **March 2016**

Retrofit Digester Gas Engine with Noxtech® Aftertreatment Emission Control Technology

Contractor
Eastern Municipal Water District

Cosponsors
Eastern Municipal Water District
SCAQMD

Project Officer
Al Baez

Background
SCAQMD Rule 1110.2 - Emissions from Gaseous and Liquid-Fueled Engines significantly reduces emission limits for nitrogen oxides (NOx), volatile organic compounds (VOCs), and carbon monoxide (CO) for internal combustion (IC) engines. The Eastern Municipal Water District operates 57 prime internal combustion engines, which include four digester gas-fueled IC engines at their Regional Water Reclamation Facilities. The amended rule requires biogas fueled engines to meet lower emission limits. The SCAQMD Governing Board directed staff to conduct a technology assessment to determine potential cost-effective available technologies to achieve the limits for biogas applications. This pilot study at EMWD's Temecula Valley Regional Water Reclamation Facility was performed as part of this requested assessment.

Project Objective
This pilot test study was to evaluate the ability of the Noxtech aftertreatment system to meet the requirements of the amended Rule 1110.2 for biogas applications.

Technology Description
Eastern Municipal Water District's Temecula Valley Regional Water Reclamation Facility (TVRWRF) utilizes two biogas internal combustion (IC) engines, supplemented by natural gas as needed, to drive aeration blowers for the wastewater treatment process. For this pilot study, the engine exhaust piping for the two biogas engines was modified to vent to the Noxtech reactor for exhaust after-treatment. The Noxtech system is designed to remove NOx, VOC, and CO from the engine exhaust through the patented Noxtech technology, that consists of: a self-sustaining auto thermal combustion process in a reaction chamber and utilizes urea, a low-cost nonhazardous liquid chemical, to chemically treat the exhaust gases. The system utilizes supplemental fuel to maintain an optimal reaction temperature, and fuel consumption is minimized by recovering heat released for temperature control and reaction optimization.

The Noxtech system differs from other biogas engine after-treatment controls, such as selective catalytic reduction (SCR), because it does not use a catalyst and therefore does not require a biogas clean-up system. Catalysts are generally highly susceptible to the impurities in the raw biogas which can typically poison, foul and plug catalysts; therefore, gas cleanup systems are required for those catalyst systems.

Throughout the pilot study, NOx and CO concentrations were measured at the inlet and outlet of the Noxtech reactor using a portable analyzer. This testing was conducted at least weekly or every 150 operating hours. Concentrations of NOx, CO, VOC and ammonia were measured using U.S. EPA and SCAQMD compliance methods during source testing. In addition, digester gas and ammonia samples were collected and analyzed periodically throughout the pilot study.

Status
The construction and installation of the Noxtech equipment at the TVRWRF began in March 2014. The Research and Development Phase, including initial commissioning, commenced in September 2014. The pilot study period and associated data collection commenced April 20, 2015 and ended January 18, 2016. There were a few periods of system downtime during the pilot study, which included a reactor inspection in July 2015, and a lengthy reactor shutdown as a result of biogas unavailability between September 29, 2015 and December 1, 2015. The majority of the testing was conducted with one engine operating on 100% biogas vented to the Noxtech due to issues

encountered with the engine isolation valves. Source testing was conducted on January 5, 2016 by SCEC (now Montrose Environmental), a CARB-approved independent testing contractor.

The Noxtech system was shut down on February 5, 2016 and testing for the pilot study was completed.



Figure 1: TVRWRF Noxtech® Reactor

Results

1. The overall compliance rate with the future Rule 1110.2 biogas concentration limits during the pilot demonstration period was 52% for NOx and 95% for CO based on the portable analyzer testing conducted.
2. Using the NOxtech control, the average exhaust stack concentrations throughout the pilot demonstration following portable analyzer testing protocols were 12.5 ppmvd NOx and 145 ppmvd CO (both corrected to 15% O_2). The average NOx concentration did not meet the future biogas limit of 11 ppmvd @ 15% O_2.
3. Using the NOxtech control, the average exhaust stack concentrations during the source testing by SCEC conducted on January 5, 2016, were 11.92 ppmvd NOx and 84.58 ppmvd CO (both corrected to 15% O_2.) The average NOx concentration did not meet the future biogas limit of 11 ppmvd @ 15% O_2.
4. The VOC concentration at the stack exhaust based on SCAQMD Method 25.3 testing conducted by SCEC averaged 2.34 ppm @ 15% O_2; this is below the future biogas limit of 30 ppm @ 15% O_2 in Rule 1110.2.
5. The overall compliance rate for the free ammonia concentration sampling in accordance with SCAQMD Method 207.1 was 50%. There were four ammonia sampling events during the pilot period, two of which exceeded the permitted limit of 10 ppm @ 15% O_2 for ammonia slip.
6. The reliability of the urea injector components and the NOx analyzer selection may benefit from additional testing to determine the equipment life expectancy and whether an alternative, more suitable component is available.

Benefits

The use of the Noxtech system generally reduced NOx, VOC, and CO emissions from the engine. However, the NOx reductions were not consistently below the amended Rule 1110.2 biogas limits and in some cases CO emissions increased. The pilot study demonstrated that aside from sample conditioning for the continuous analyzers, a digester gas clean-up system is not required for the Noxtech system.

Project Costs

SCAQMD provided $85,000 from the Clean Fuels Fund for this project. EMWD funded the remaining costs for total project costs of $889,000.

Commercialization and Applications

The capital costs to design, procure and install the Noxtech system will vary depending on the site. The estimated cost of a reactor is $400,000 and the installation cost for the pilot study installation of the two dual fuel blower engines at the TVRWRF was approximately $525,000. EMWD staff invested significant additional staff resources throughout the Research and Development Phase as well as the Pilot Demonstration Phase of this test program to make system improvements to resolve short-term problems and identify long-term solutions for the challenges faced during this study. EMWD spent approximately $1.35 million dollars on the TVRWRF Noxtech installation and pilot study. EMWD staff estimates the capital costs for a system similar to the unit installed at the TVRWRF, for two engines, to be up to $1.8 million dollars. The annual estimated O&M costs for the Noxtech system are approximately $77,000. Assuming a 10-year lifespan, the total annualized cost (estimated capital and O&M) is $242,000. The dollars per ton of NOx reduced are estimated to be $579,340. The dollars per ton of VOC reduced are estimated to be $222,510.

SCAQMD Contract #12208 **January 2016**

Determining the Physical and Chemical Composition and Associated Health Effects of Tailpipe PM Emissions

Contractor

University of California Riverside/College of Engineering-Center for Environmental Research & Technology (CE-CERT)

Cosponsors

California Energy Commission
SCAQMD

Project Officer

Brian Choe

Background

In recent years, governmental agencies around the world have implemented legislation that supports the use of alternative and/or renewable fuels in the transportation sector to reduce GHG emissions. In California, the Low Carbon Fuel Standard (LCFS) was implemented beginning in 2011 to reduce the carbon intensity of transportation fuels by 10% by 2020. Among the different oxygenated biofuels being used globally today, ethanol is the most widely employed, particularly in the U.S. Higher alcohols, such as butanol, have also been the subject of increased interest as potential fuels. With an increase in the use of ethanol and other biofuels to lower carbon intensity, it is important to analyze and test these fuel blends to better understand the impacts that changing fuel composition will have on exhaust emissions and in turn on ambient air quality, especially from gasoline direct injection (GDI) vehicles that are the fastest growing market segment in the automobile industry as manufacturers introduce more GDI models to meet new and more stringent fuel economy standards.

Project Objective

The objective of this program was to characterize physicochemical and toxicological properties of PM emissions from GDI vehicles when operating on different ethanol and iso-butanol blends.

Technology Description

As part of this study, physicochemical, and toxicological properties of PM emissions were investigated from one GDI passenger vehicle and two flexible fuel vehicles (FFVs), with port fuel injection (PFI) and direct injection fueling, respectively. This study emphasized the fuel type, composition, and blend level impacts on exhaust emissions and their potential toxicity. The study included both low and high level blends of ethanol and butanol, including E10, E20, Bu16, E51, E83, and Bu55. All testing was conducted on a 48-inch single-role electric dynamometer and a Pierburg Positive Displacement Pump-Constant Volume Sampling system was used to obtain certification-quality measurements. This was a collaborative study led by the College of Engineering-Center for Environmental Research & Technology (CE-CERT) at the University of California, Riverside, with support from the University of California, Los Angeles (UCLA) for toxicological analysis.

Status

This project has been completed and final reporting submitted in June 2016.

Results

PM mass, particle number, and black carbon emissions from the two GDI vehicles were found at higher levels than the PFI-FFV, due to incomplete fuel droplet evaporation and droplet impingement onto the piston and cylinder walls from the direct spray of fuel into the combustion chamber, leading to locally rich fuel combustion or pyrolysis that is prone to PM formation. For the FTP, PM mass ranged from 1.23 to 2.74 mg/mile for the PC-GDI, from 0.79 to 3.06 mg/mile for the PFI-FFV, and from 1.68 to 4.85 mg/mile for the GDI-FFV. For the UC test cycle, PM mass ranged from 0.68 to 2.53 mg/mile for the PC-GDI, from 0.73 to 1.49 mg/mile for the PFI-FFV, and from 1.15 to 4.83 for the GDI-FFV. Overall, the use of higher alcohol content fuels resulted in lower PM mass emissions

for all three vehicles during FTP and UC operations, with the exception of the PFI-FFV. The GDI-FFV exhibited substantially higher soot emissions than the PFI-FFV, suggesting that the PM from the GDI-FFV was primarily elemental carbon in nature.

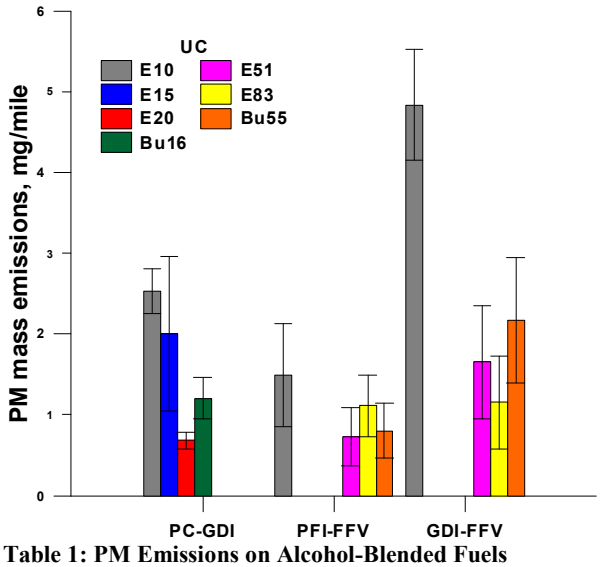


Table 1: PM Emissions on Alcohol-Blended Fuels

More than 100 PAH compounds were identified and quantified in both the gas- and particle-phase exhaust PM for all vehicle/fuel combinations over the FTP test cycle, including non-substituted PAHs, methyl- and ethyl-substituted PAHs, biphenyls, and oxygenated PAHs. Also, the GDI-FFV showed higher levels of total PAH emissions, compared to the other two vehicles, with the higher alcohol blends showing lower total PAH emissions than E10.

The oxidative potential, measured with the DTT assay, did not show any strong trends for the different alcohol fuels tested on both GDI and PFI vehicles. The DTT activity rates of all higher ethanol blends were below the blank/background samples for both the particle- and vapor-phase PM.

Benefits

The outcome of this study provided important information about the potential impacts of mid-level and high-level ethanol and iso-butanol blends on emissions and air quality during the near and medium term implementations of renewable fuel regulations. In addition, the test results are helpful in assessing the health consequences of population exposure to GDI vehicles in Southern California.

Project Costs

The project cost of $175,000 was funded by the SCAQMD. This project was conducted in conjunction with a testing program primarily funded by a $1,200,000 grant from the California Energy Commission to evaluate criteria and other regulated emissions from ethanol- and other alcohol-fueled vehicles.

Commercialization and Applications

In summary, the data from this study confirm that vehicles with direct injection fueling are exhibiting higher PM mass, number and soot emissions compared to PFI vehicles. The addition of higher ethanol blends results in lower particulate emissions for both engine technologies. This result is important since GDI vehicles are becoming more prevalent in the U.S. market and it is expected that they will eventually dominate the market over the conventional PFI vehicles.

The use of ethanol appears to be beneficial for substantially reducing PM mass emissions from GDI vehicles. Our findings show that GDI vehicles produce more toxic and potentially carcinogenic compounds in the tailpipe, such as those of PAHs, compared to PFI vehicles. The application of ethanol fuels, on the other hand, is capable of reducing most PAH compounds in the tailpipe. Overall, this study did not show any redox activity in both GDI and PFI exhaust, with the results being largely inconclusive regarding the health effects impact from current technology GDI and PFI vehicles on alcohol fuels.

Looking ahead, the results suggest that further testing is necessary utilizing next-generation GDI vehicles equipped with either wall-guided or spray-guided architectures on ethanol blends. More importantly, a more comprehensive investigation is necessary on real-world driving emissions using portable emission measurement systems (PEMS).

SCAQMD Contract #12865 **July 2016**

Develop Quantitative Cellular Assays to Understand the Chemical Basis of Air Pollutant Toxicity

Contractor

University of California Los Angeles (UCLA)

Cosponsors

SCAQMD
UC Riverside (UCR)/College of Engineering-Center for Environmental Research & Technology (CE-CERT)

Project Officer

Dr. Jean Ospital/Dr. Jo Kay Ghosh

Background

Regulatory efforts are focused on reduction of emissions of motor vehicles, including diesel-fueled vehicles involved with goods movement in Southern California. These reductions are aimed at meeting ambient air quality standards, including for PM10 and PM2.5, as well as reducing exposure to toxic air contaminants. As lower-emitting technologies are deployed and particle emissions go down, however, a question remains as to the toxicity of the remaining emissions. Although advanced technologies are very effective at lowering the mass of emissions, there are concerns that other substances such as volatile and semi-volatile organic compounds may be emitted that have potential adverse health effects.

Project Objective

The University of California Los Angeles (UCLA) proposed to develop a biological mechanism-based analytical procedure to characterize the toxicity of air pollutants. UCLA would work with 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 could then be conducted with, for example, emissions from advanced-technology engines to compare the results from assays using the standard diesel emissions. The project would also build upon the toxicity assays developed under the auspices of the Southern California Particle Center, which was sponsored by the U.S. EPA.

Technology Description

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 were used, as well as specific macrophage cell lines that had been used in previous air pollution toxicity studies. A standard protocol was also developed that was applied to collect pollutant samples. The overall response by the cell or the organism will reflect the "balance" between the two opposing responses. Investigators postulated that redox active metals in the particle phase are the major factors in inflammation and volatile organic electrophiles the major factor in adaptation.

Status

This project was done in two phases. The first phase was to conduct development and initial application of the toxicity assays. The second phase was to further develop and apply the toxicity assays to both particulate and vapor phase pollutant samples. This study is now complete.

The project was supposed to include fractionation of a large-scale diesel exhaust particle (DEP) sample coming from Japan. Because it wasn't timely provided during the scope of the project, UCLA was only able to begin some protocol development utilizing a sequential of extraction with the solvent mixtures and dominant chemical species extracted.

Results

Ambient air samples (PM2.5 and semi-volatile organic species) from Commerce (CM), Long Beach (LB) and San Bernardino (SB) were analyzed chemically with the DTT prooxidant and GAPDH electrophile assays and biologically for concentration-dependent effects on inflammation and adaptation, measured by induction of tumor necrosis factor alphas (TNFa) and hemeoxygenase-1 (HO-1), respectively, in a macrophage cell line. Seasonal differences were observed with winter PM2.5 samples from CM and LB containing significantly higher prooxidant content than the corresponding summer samples. Prooxidants were mostly in the particle phase (70-80%) and electrophiles were mostly (80-95%) in the vapor or the volatile organic phase in all samples. Biological analyses of summer PM2.5 samples reflected their

reactive chemical content with the SB sample the most proinflammatory. Analysis of the corresponding vapor samples showed the SB sample, with its highest electrophile content, to be the most potent in inducing adaptation. Aside from the regional and seasonal differences these quantitative analyses demonstrated, the chemical and biological results also pointed out the important contributions the volatile organic species in the ambient air provide to the overall biological effects of the ambient aerosol. The PM2.5 samples are proinflammatory; when examined separately from the vapor phase, they induce an inflammatory response, whereas the vapor phase, with its high electrophile content is pro-adaptive, inducing expression of proteins that suppress inflammation. Then when the vapor and particle effects are examined together, the proinflammatory effects of PM2.5 are reduced by the semi-volatile organic components.

Emission samples from biodiesel-fueled engines and cooking oil smoke samples from CE-CERT were also subjected to these analyses. However, as quantities limited the biological analyses to single concentration instead of three, comparisons between chemical and biological analyses were performed on separate samples at a fixed concentration and the data analyzed by correlation analysis. In general, the results agreed with those found in the three-community study above, in that the particle phase contained prooxidants and the vapor phase contained the electrophiles.

A correlation analysis of assay results and chemical data from CE-CERT was then performed to test the notions that the inflammatory response was related to prooxidant activity and that the adaptive response was reflective of the chemical data linked to organic electrophiles. For the particle samples, the inflammatory TNFa response and prooxidant effect were highly correlated ($p<.04$) and the prooxidant content correlated with redox active metal content ($p<.011$) consistent with the notion of metal-based prooxidant action on the inflammatory response. The electrophile content of the vapor samples was too low for measurement, but prooxidant content was measureable. Analyses of these samples showed a high correlation of the adaptive response with the prooxidant activity ($p<0.014$) which, in turn correlated with the water-soluble organic content ($p<.04$). The objective of the study generating these samples was to compare the emissions for their potential toxicity and the results obtained here show the decreasing order to be ULSD>waste cooking oil≥soy>animal fat methyl esters.

The cooking oil smoke-based results were qualitatively different from the biodiesel, reflecting differences in chemical composition; the adaptive response was dominant for the particles with a high correlation with prooxidant content ($p<.013$). Vapor phase sample adaptive activity did not correlate with either prooxidant or electrophile content.

The objective of the study generating these samples was to compare the effectiveness of three different types of filter systems in removing the toxic components of cooking oil smoke. The results indicate the decreasing order of toxicity to be baseline>Streivor>Innovatech>ES.

Benefits

The project helped to address questions such as which specific chemicals in pollutant samples are associated with cellular toxicity, assess the relative effects of particulate versus vapor phase of emissions, and compare toxic responses of emissions from different fuel types. The results would help form the scientific basis for quantifying how reducing emissions and promoting alternative technologies may improve public health. It helped understanding of the linkage between sources, chemical composition, and toxicity of emissions from motor vehicles, and thus how to assess strategies to protect the public from exposure to motor vehicle emissions.

Project Costs

For Phase 1 the SCAQMD provided $368,457, with UCR/CE-CERT providing in-kind cost-share totaling $60,609. For Phase 2 the SCAQMD provided $319,553. Total project costs were $748,619.

Commercialization and Applications

The results clearly demonstrate the advantages of quantitative chemical and biological analyses in the evaluation of air pollution toxicology. Furthermore, they show that such assays need not be for specific chemical species as much as they need to assay biologically relevant chemical reactivities together with biological responses. Investigators believe that the four relatively simple procedures for prooxidant and electrophile content and for inflammatory and adaptive responses, together with consistent collection procedures, will provide regulators with useful quantitative data in determining the conditions for adverse health associated with aerosol generation and approaches to its amelioration.

SCAQMD Contract #14172 **August 2016**

Study Of Oxidative Stress In Relation To Particulate Air Pollution Exposures In Elderly

Contractor

University of California Irvine

Cosponsors

SCAQMD
BP Group

Project Officer

Dr. Jean Ospital/Dr. Jo Kay Ghosh

Background

Ambient particulate matter (PM), specifically PM2.5 and PM10, has been associated with increases in cardiovascular and respiratory hospitalization and mortality in many epidemiologic time series studies. However, exposure error from the use of PM2.5 and PM10 has likely produced underestimates of PM effects because numerous toxic particle components are not accurately reflected by total mass (Ayres 2008). Furthermore, particle oxidative potential can be independent of mass, because a large fraction of PM mass is biologically inactive, while a temporally and spatially variable smaller fraction has the potential to induce oxidative stress. Oxidative stress is a key effect of air pollutants that is believed to be one of the major pathophysiological mechanisms responsible for the observed morbidity and mortality associations. Specifically, many experimental studies suggest that increased airway inflammation occurs through oxidative stress, which follows exposure to products of fossil fuel combustion, including chemicals with oxidative potential. However, there is little epidemiologic data on relations between such chemical components in PM air pollution including polycyclic aromatic hydrocarbons (PAH) and airway oxidative stress. These issues are important to assess given the multipollutant nature of PM. This has considerable importance to protecting public health since effect estimates from population studies may have underestimated effects by lumping air pollutant components with different toxicities and different target organs into one surrogate exposure such as PM2.5.

Project Objective

We examined relations of air pollution exposures to airway and systemic biomarkers of oxidative stress in a cohort panel of elderly subjects living in the Los Angeles air basin.This was accomplished with 12 weekly measurements of air pollutants and other cardiovascular and respiratory outcomes in a panel study funded by the National Institutes of Health (NIH, NIEHS, R01-ES12243-06). We collected exhaled breath condensates and measured biomarkers of airway oxidative stress and related them to air pollutant exposures. Air pollutants included size-fractionated PM, which was measured under the NIH funding. The biomarkers were assayed in the exhaled breath condensates and included malondialdehyde (a biomarker of lipid peroxidation) measured by fluorescent HPLC. The NIH study provided additional comparison data on airway inflammation, systemic oxidative stress and inflammation in the blood.

Technology Description

We conducted a cohort panel study involving 97 elderly subjects living in the Los Angeles metropolitan area. Airway and circulating biomarkers of oxidative stress and inflammation were measured weekly over 12 weeks and included, exhaled breath condensate malondialdehyde (EBC MDA), fractional exhaled nitric oxide (FeNO), plasma oxidized low-density lipoprotein (oxLDL), and plasma interleukin-6 (IL-6). Exposures included 7-day personal nitrogen oxides (NO_X), daily criteria-pollutant data, five-day average PM measured in three size-fractions and characterized by chemical components including transition metals, and *in vitro* PM oxidative potential (dithiothreitol and macrophage reactive oxygen species). Associations between biomarkers and pollutants were assessed using linear mixed effects regression models.

Status

This project was completed successfully in August 2016. The final report with complete technical details is submitted and on file at SCAQMD.

Results

We found significant positive associations of airway oxidative stress and inflammation with traffic-related air pollutants, ultrafine particles < 0.18 µm in aerodynamic diameter, and transition metals. Results for the airway biomarker of oxidative stress (EBC MDA) are shown in Figure 1.

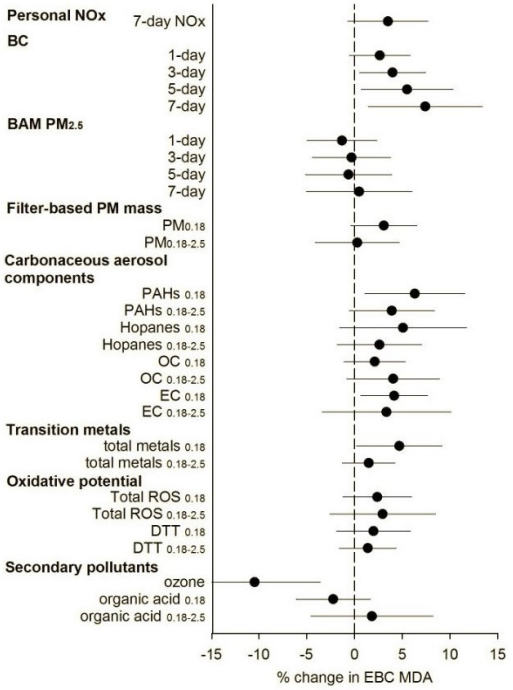


Figure 1. Percent Change (mean and 95 % confidence intervals) in airway inflammatory biomarkers EBC MDA (A) and airway oxidative stress biomarker FeNO (B) with a one interquartile range increase of ambient and personal air pollutants. Exposures were averaged across 5 days except as specified. BC: black carbon; CO: carbon monoxide; DTT: dithiothreitol; EBC MDA: malondialdehyde in exhaled breath condensate; EC: elemental carbon; FeNO: exhaled nitric oxide; NO_X: nitrogen oxides; OC: organic carbon; PAHs: polycyclic aromatic hydrocarbons; ROS: reactive oxygen species.
From Zhang et al. Environ Res, 2016;150:306-319

Positive but nonsignificant associations were observed with markers of PM oxidative potential. The strongest associations were observed among PM variables in the ultrafine range. It was estimated that an interquartile increase in 5-day average ultrafine polycyclic aromatic hydrocarbons was associated with a 6.3% (95% CI: 1.1%, 11.6%) increase in EBC MDA and 6.7% (95% CI: 3.4%, 10.2%) increase in FeNO. In addition, positive but nonsignificant associations were observed between oxLDL and traffic-related pollutants, ultrafine particles and transition metals while plasma IL-6 was positively associated with 1-day average traffic-related pollutants.

Benefits

This study adds to mounting evidence that exposure to prooxidant particle components from fossil fuel combustion sources such as PAH result in oxidative stress and inflammation. The extensive chemical characterization of air pollutant exposures in the present study enabled a comprehensive assessment of airway oxidative stress responses to different air pollutant components. These results were coherent with results from the parent NIH-funded parent study showing other adverse pathophysiological responses, including increased systemic inflammation and microvascular endothelial dysfunction. Results of this research has contributed to knowledge needed to control multipollutant exposures most likely to adversely impact the public's health because we addressed questions about which chemical components and sources of air pollution have the greatest potential for toxicity in people. Findings contribute to regulatory decisions aimed at protecting sensitive populations because putative causal constituents of PM are likely not well-represented by PM2.5 alone.

Project Costs

SCAQMD cost-shared this from the Clean Fuels Fund in the amount of $159,974. The BP Group contributed $216,394, in keeping with the ongoing terms of a 2005 settlement agreement. Total project costs were $376,368.

Commercialization and Applications

This is an epidemiologic study using existing laboratory technology. The methods used can and should be applied to other projects with similar goals of assessing the health impacts of air pollution in susceptible populations. The results can be applied to the decision-making process on whether certain alternative fuel technologies should be developed and deployed.

Appendix D

Project Ranking

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Project Ranking

For each of the core technologies discussed earlier in this report, staff considers numerous factors that influence the proposed allocation of funds, ranging from overall Environment & Health Benefits, Technology Maturity and Compatibility, and Cost, summarized in the proposed ranking system.

Within the broad factors included above, staff has included sub-factors for each specific type of project that may be considered, as summarized below:

Environment and Health

Criteria Pollutant Emission Reduction potential continues to receive the highest priority for projects that facilitate the NOx reduction goals outlined in the 2016 AQMP. Technologies that provide co-benefits of Greenhouse Gas and Petroleum Reduction are also weighted favorably, considering the Clean Fuels Program is able to leverage funds available through several state and federal programs, as well as overall health benefits in reducing exposure to Ozone and PM2.5, especially along disadvantaged communities.

Technology Maturity & Compatibility

Numerous approaches have been used to evaluate technology maturity and risk that include an evaluation of potential uncertainty in real world operations. This approach can include numerous weighting factors based on assessed importance of a particular technology. Some key metrics that can be considered include Infrastructure Constructability that would evaluate the potential of fuel or energy for the technology and readiness of associated infrastructure, Technology Readiness that includes not only the research and development of the technology, but potential larger scale deployments that consider near-term implementation duty and operational compatibility for the end users. These combined factors can provide an assessment for market readiness of the technology.

Cost/Incentives

The long-term costs and performance of advanced technologies are highly uncertain, considering continued development of these technologies is likely to involve unforeseen changes in basic design and materials. Additionally, economic sustainability – or market driven – implementation of these technologies is another key factor for the technology research, development, demonstration and deployment projects. Therefore, in an effort to accelerate the demonstration and deployment, especially some pre-commercialization technologies, incentive programs such as those available from local, state and federal programs are key, but may be underfunded for larger scale deployments. As a part of the 2016 AQMP, staff has also included the Draft Financial Incentives Funding Action Plan to address the funding necessary for full implementation of the control measures included.

Staff has proposed a simplified approach to ranking the core technologies, especially some of the specific platforms and technologies discussed in the draft plan and annual report. The rankings below take into account experience with implementing the Clean Fuels Program for numerous years, as well as understanding the current development and deployment state of the technologies and associated infrastructure, and are based on the following "Consumer Reports" type approach:

● Excellent ◓ Good ○ Satisfactory ◒ Poor ● Unacceptable

The table below summarizes staff ranking of the potential projects anticipated in the draft plan, and it is noted that technology developers, suppliers, and other experts may differ in their approach to ranking these projects. For example, staff ranks Electric/Hybrid Technologies and Infrastructure as Excellent or Good for Criteria Pollutant and GHG/Petroleum Reduction, but Poor to Good for Technology Maturity & Compatibility, and Satisfactory to Unacceptable for Costs and Incentives to affect large

scale deployment. It is further noted that the Clean Fuels Fund's primary focus remains on-road vehicles and fuels, and funds for off-road and stationary sources are limited.

This approach has been reviewed with the Clean Fuels and Technology Advancement Advisory Groups, as well as the Governing Board.

Technologies & Proposed Solutions	Environment & Health			Technology Maturity & Compatibility				Cost	
	Emissions Reduction	GHG/Petroleum Reduction	Health Benefits	Infrastructure Constructability	Technology Readiness	Near-Term Implementation/ Duty Cycle Fulfillment Capability	Operations Compatibility	Relative Cost & Economic Sustainability	Incentives Available
Electric/Hybrid Technologies & Infrastructure									
Plug-In Hybrid Heavy-Duty Trucks with Zero-Emission Range	◓	○	◓	●	○	◓	◓	◒	●
Heavy-Duty Zero-Emission Trucks	●	◓	●	◓	◒	◒	○	●	●
Medium-Duty Trucks	◓	◓	●	◓	○	◒	◒	◒	●
Medium- and Heavy-Duty Buses	●	◓	●	◓	○	◒	○	◒	●
Light-Duty Vehicles	◓	◓	●	◓	◓	◓	◓	◒	◒
Infrastructure	-	-	-	◓	◓	◓	◓	○	◒
Hydrogen & Fuel Cell Technologies & Infrastructure									
Heavy-Duty Trucks	●	◓	◓	○	◒	◒	◒	●	●
Heavy-Duty Buses	●	◓	◓	○	◒	◒	◒	●	●
Off-road – Locomotive/Marine	●	◓	◓	○	◒	◒	◒	●	●
Light-Duty Vehicles	●	◓	◓	○	◓	○	○	○	◒
Infrastructure – Production, Dispensing, Certification	-	-	-	○	○	◒	◒	●	◒
Engine Systems									
Ultra-Low emissions Heavy-Duty Engines	◓	◓	◓	●	○	○	●	◓	○
Alternative Fuel Medium- and Heavy-Duty Vehicles	◓	◓	◓	●	◓	◓	●	◓	○
Off-Road Applications	◓	◓	◓	●	◓	◓	●	◓	○
Fueling Infrastructure & Deployment									
Production of Renewable Natural Gas – Biowaste/Feedstock	◓	●	◓	●	◓	◓	◓	○	○
Synthesis Gas to Renewable Natural Gas	◓	●	◓	●	◓	◓	◓	○	○
Expansion of Infrastructure/Stations/Equipment/RNG Transition	◓	◓	◓	●	◓	◓	◓	◓	○
Stationary Clean Fuel Technologies									
Low-Emission Stationary & Control Technologies	◓	◓	◓	◓	○	○	◓	○	○
Renewable Fuels for Stationary Technologies	○	●	◓	◓	○	○	○	○	○
Vehicle-to-Grid or Vehicle-to-Building/Storage	●	●	◓	○	○	◒	○	○	◒
Emission Control Technologies									
Alternative/Renewable Liquid Fuels	◒	◓	◓	◓	○	○	●	◒	○
Advanced Aftertreatment Technologies	◓	○	◓	○	○	◓	◓	◓	○
Lower-Emitting Lubricant Technologies	○	○	●	-	◓	◓	◓	●	○
● Excellent ◓ Good ○ Satisfactory ◒ Poor ● Unacceptable									

Appendix E

List of Acronyms

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LIST OF ACRONYMS

AB—Assembly Bill
AC-absorption chiller
ADA—American with Disabilities Act
AER—all-electric range
AFRC—air/fuel ratio control
AFVs—Alternative Fuel Vehicles
APCD—Air Pollution Control District
AQMD—Air Quality Management District
AQMP—Air Quality Management Plan
ARB—Air Resources Board
ARRA—American Recovery & Reinvestment Act
AWMA—Air & Waste Management Association
BACT—Best Available Control Technology
BET—battery electric truck
BEV—battery electric vehicle
BSNOx—brake specific NOx
BMS—battery management system
CAAP—Clean Air Action Plan
CAFR—Comprehensive Annual Financial Report
CaFCP—California Fuel Cell Partnership
CARB—California Air Resources Board
CATI—Clean Air Technology Initiative
CCF—California Clean Fuels
CCHP—combined cooling, heat and power
CDFA/DMS—California Department of Food &Agriculture/Division of Measurement Standards
CEC—California Energy Commission
CE-CERT—College of Engineering – Center for Environmental Research and Technology
CEMS—continuous emission monitoring system
CEQA—The California Environmental Quality Act
CFCI—Clean Fuel Connection, Inc.
CFD—computational fluid dynamic
CHBC—California Hydrogen Business Council
CNG—compressed natural gas
CNGVP—California Natural Gas Vehicle Partnership
CO_2—carbon dioxide
CO—carbon monoxide
ComZEV—Commercial Zero-Emission Vehicle
CPA—Certified Public Accountant
CPUC—California Public Utilities Commission
CRDS—cavity ring-down spectroscopy
CRT—continuously regenerating technology
CVAG—Coachella Valley Association of Governments
CY—calendar year
DC—direct connection
DCM—dichloromethane
DEG—diesel equivalent gallons
DGE—diesel gallon equivalents
DF—deterioration factor
DME—dimethyl ether
DMS—Division of Measurement Standards
DMV—Department of Motor Vehicles
DOC—diesel oxidation catalysts
DOE—Department of Energy
DOT—Department of Transportation
DPF—diesel particulate filters
DRC—Desert Resource Center
DRI—Desert Research Institute
ECM—emission control monitoring
EDTA—Electric Drive Transportation Association
EGR—exhaust gas recirculation
EIN—Energy Independence Now
EPRI—Electric Power Research Institute
E-rEV—extended-range electric vehicles
ESD—emergency shut down
EV—electric vehicle
FCV—fuel cell vehicle
FTA—Federal Transit Administration
FTP—federal test procedures
g/bhp-hr—grams per brake horsepower per hour
GC/MS—gas chromatography/mass spectrometry
GCW—gross combination weight
GDI—gasoline direct injection
GGE—gasoline gallon equivalents
GGRF—Greenhouse Gas Reduction Relief Fund
GHG—Greenhouse Gas
GNA—Gladstein, Neandross & Associates, LLC
GTL—gas to liquid
H&SC—California Health and Safety Code
HCCI—Homogeneous Charge Combustion Ignition
HCNG—hydrogen-compressed natural gas (blend)
HDDT—highway dynamometer driving schedule
HD-FTP—Heavy-Duty Federal Test Procedure
HDV—heavy-duty vehicle
HEV—Hybrid electric vehicle
HOA—Homeowners Association
HQSA—hydrogen quality sampling adapter
HPDI—High Pressure Diesel Injection
HPLC—high-performance liquid chromatography
HT—high throughput
HTFCs-high-temperature fuel cells
H2NIP—Hydrogen Network Investment Plan
HTPH—high throughput pretreatment and enzymatic hydrolysis
HyPPO—Hydrogen Progress, Priorities and Opportunities report

LIST OF ACRONYMS (cont'd)

ICE—internal combustion engine
ICEV—internal combustion engine vehicle
ICTC—Interstate Clean Transportation Corridor
IVOC—intermediate volatility organic compound
kg—kilogram
LACMTA—Los Angeles County Metropolitan Transit Authority
LADWP—Los Angeles Department of Water and Power
LCFS—Low Carbon Fuel Standard
Li—lithium ion
LIMS—Laboratory Information Management System
LLNL—Lawrence Livermore National Laboratory
LNG—liquefied natural gas
LPG—liquefied petroleum gas or propane
LSV—low-speed vehicle
LUV—local-use vehicle
LVP—low vapor pressure
MATES—Multiple Air Toxics Exposure Study
MECA—Manufacturers of Emission Controls Association
MOA—Memorandum of Agreement
MPa—MegaPascal
MPFI—Multi-Port Fuel Injection
MPG—miles per gallon
MSRC—Mobile Source Air Pollution Reduction Review Committee
MSW—municipal solid wastes
MY—model year
MTA—Metropolitan Transportation Authority (Los Angeles County "Metro")
NAAQS-National Ambient Air Quality Standards
NAFA—National Association of Fleet Administrators
NFPA—National Fire Protection Association
NCP—nonconformance penalty
NEV—neighborhood electric vehicles
NextSTEPS—Next Sustainable Transportation Energy Pathways
NG/NGV—natural gas/natural gas vehicle
NH3—ammonia
NHTSA—Natural Highway Traffic Safety Administration
NMHC—non-methane hydrocarbon
NO—nitrogen monoxide
NO_2—nitrogen dioxide
$NO + NO_2$—nitrous oxide
NOPA—Notice of Proposed Award
NOx—oxides of nitrogen
NRC—National Research Council
NREL—National Renewables Energy Laboratory
NSPS—New Source Performance Standard
NSR—New Source Review
NZ—near zero
OBD—On-Board Diagnostics
OCS—overhead catenary system
OCTA—Orange County Transit Authority
OEHHA—Office of Environmental Health Hazard Assessment
OEM—original equipment manufacturer
PAH—polyaromatic hydrocarbons
PbA—lead acid
PCM—powertrain control module
PEMFC—proton exchange membrane fuel cell
PEMS—portable emissions measurement system
PEV—plug-in electric vehicle
PHET—plug-in hybrid electric truck
PHEV—plug-in hybrid vehicle
PM—particulate matter
PM2.5—particulate matter ≤ 2.5 microns
PM10—particulate matter ≤ 10 microns
POS—point of sale
ppm—parts per million
ppb—parts per billion
PSI—Power Solutions International
PTR-MS—proton transfer reaction-mass spectrometry
RDD&D (or RD3)—research, development, demonstration and deployment
REC—renewable energy certificates
RFP—Request for Proposal
RFS—renewable fuel standards
RI—reactive intermediates
RNG—renewable natural gas
RPS—Renewable Portfolio Standard
RRC—rolling resistance co-efficient
RTA—Riverside Transit Agency
RTP/SCS—Regional Transportation Plan/Sustainable Communities Strategy
SB—Senate Bill
SCAB—South Coast Air Basin or "Basin"
SCAQMD—South Coast Air Quality Management District
SCE—Southern California Edison
SCR—selective catalytic reduction
SHR—Steam Hydrogasification Reaction
SI—spark ignited
SI-EGR—spark-ignited, stoichiometric, cooled exhaust gas recirculation
SIP—State Implementation Plan

LIST OF ACRONYMS (cont'd)

SJVAPCD—San Joaquin Valley Air Pollution Control District
SOAs—secondary organic aerosols
SoCalGas—Southern California Gas Company (A Sempra Energy Utility)
SULEV—super ultra-low emission vehicle
SUV—Sports Utility Vehicle
TAO—Technology Advancement Office
TC—total carbon
TEMS—transportable emissions measurement system
THC—total hydrocarbons
TO—task order
tpd—tons per day
TRB—Transportation Research Board
TSI—Three Squares, Inc.
TWC—three-way catalyst
UCR—University of California Riverside
UCLA—University of California Los Angeles
UDDS—urban dynamometer driving schedule
$\mu g/m^3$—microgram per cubic meter
ULEV—ultra low emission vehicle
UPS—United Postal Service
U.S.—United States
U.S.EPA—United States Environmental Protection Agency
V2B—vehicle-to-building
V2G—vehicle-to-grid
VMT—vehicle miles traveled
VOC—volatile organic compounds
WVU—West Virginia University
ZECT—Zero Emission Cargo Transport
ZEV—zero emission vehicle

Attachment D



Technology Advancement Office

Leading the way to zero and near-zero emission technologies

Clean Fuels Program 2016 Annual Report and 2017 Plan Update

March 2017

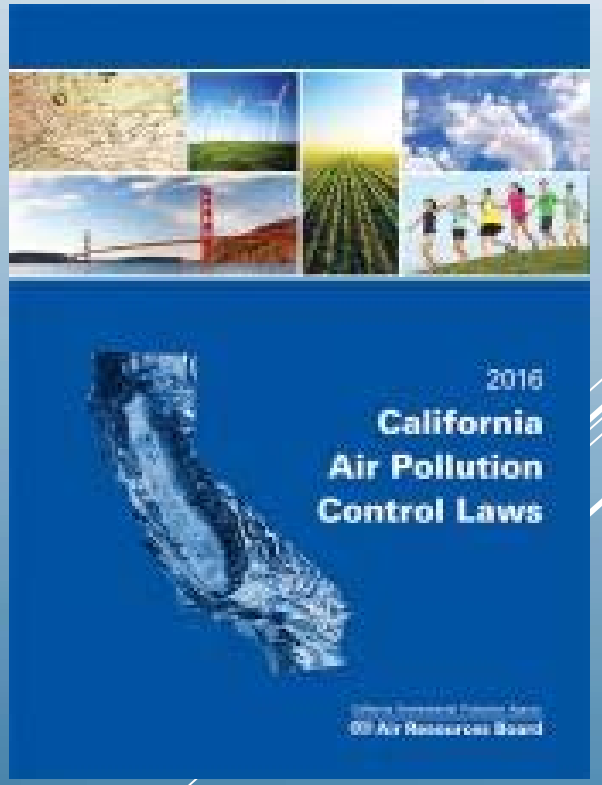
South Coast AQMD

South Coast Air Quality Management District

aqmd.gov

BACKGROUND

- Annual Report on Clean Fuels Program (HSC 40448.5.1)
- Technology Advancement Plan (Update) (HSC 40448.5)
- Draft 2017 Plan Update submitted to Technology Committee October 21, 2016
- Annual public hearing to approve Annual Report and adopt final Plan Update
- Submit to Legislature by March 31 every year



INPUT



- Advisory group meetings
  - September 2016 and January 2017
  - Technology Advancement Advisory Group
  - Clean Fuels Advisory Group
  - Invited technical experts
- Meetings with agencies, industry groups technology providers and other stakeholders
- Zero and near-zero emissions heavy-duty truck site visit and discussion with EPA, CARB, Ports (October 2016)
- Medium- and Heavy-Duty Innovators Roundtable (May 2016)

CLEAN FUELS PROGRAM CORE TECHNOLOGIES

- **Hydrogen/Fuel Cell Technologies and Infrastructure**
- **Electric/Hybrid Technologies and Infrastructure**
- **Engine Systems (ultra-low emission NG HDVs)**
- **Fueling Infrastructure and Deployment (NG/RNG)**
- Fuels/Emissions Studies
- Stationary Clean Fuel Technologies
- Emission Control Technologies
- Health Impacts Studies
- Technology Assessment/Transfer and Outreach



2016 – KEY FUNDING PARTNERS

Total = $48.9M









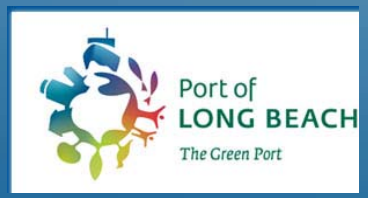








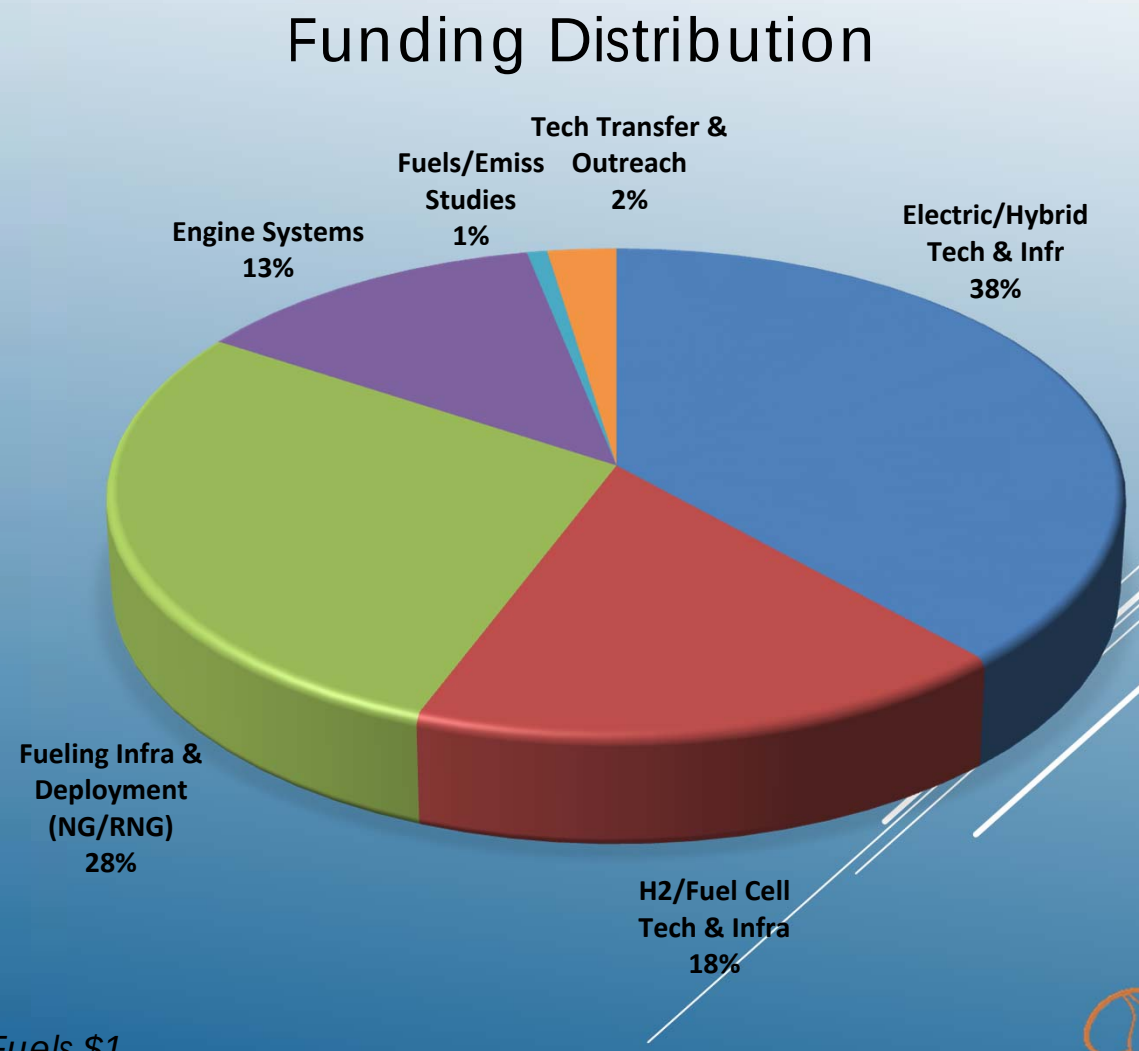






CY 2016 ACCOMPLISHMENTS

- Contracts executed - 66
  - $21.8 million from Clean Fuels Fund
  - $198 million – total project costs
  - 1:9 leveraging (not typical*)
- Completed projects - 43
  - 32 research, development, demonstration and deployment projects
  - 11 technology assessment/ transfer and outreach projects



*Typical cost leveraging is $3-$4 per every Clean Fuels $1

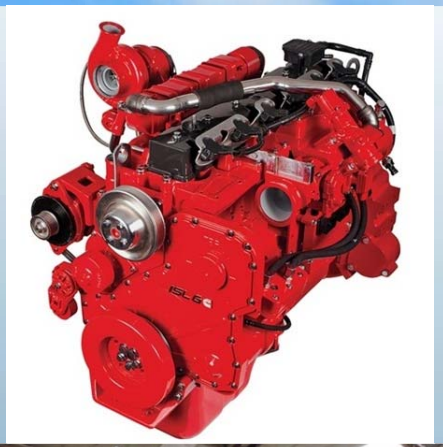
2016 KEY PROJECTS INITIATED

- Hydrogen/fuel cell technologies and infrastructure
  - ZECT II: Class 8 fuel cell range-extended electric drayage truck
  - Fuel cell extended-range powertrain for parcel delivery trucks
  - Fuel cell hybrid electric medium-duty trucks
- Electric/hybrid technology development and demonstrations
  - Zero Emission Drayage Truck Demonstration Project (BYD, Kenworth, Peterbilt and Volvo)



2016 KEY PROJECTS INITIATED (CONT'D)

- Engine systems
  - Ultra-low emission 12L natural gas engines
- Fueling Infrastructure and deployment (NG/RNG)
  - RNG production facilities & RNG vehicle demonstrations
  - Fueling station expansion adding NG for retail multi-fuel alternative fuel station
- Fuels/Emissions studies
  - Ozone & secondary aerosol formation
  - Opportunities/benefits of deploying next gen heavy-duty NG vehicles operating on RNG







KEY PROJECTS COMPLETED IN 2016

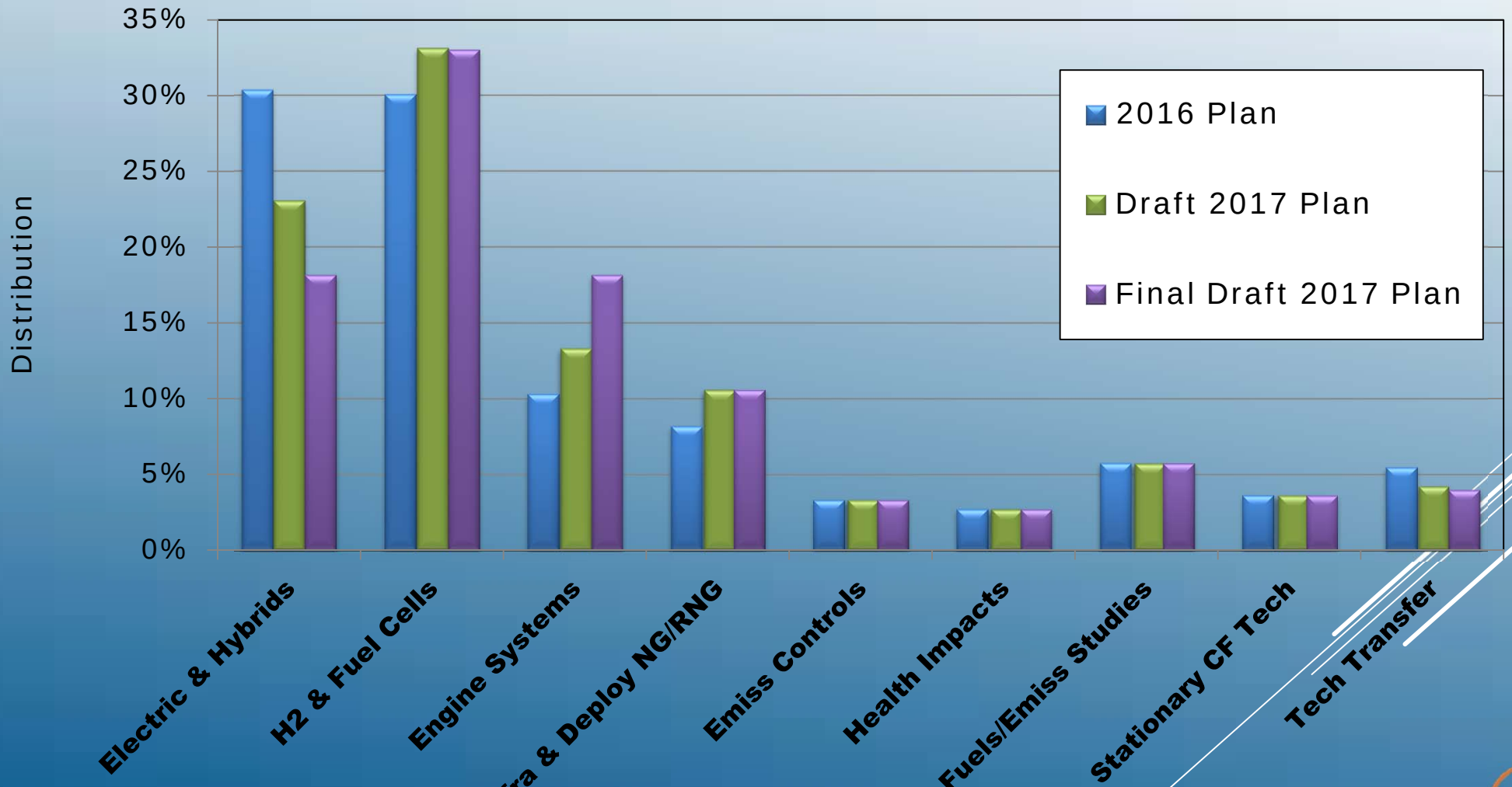
- Burbank hydrogen station (next step upgrade to current retail standard)
- Plug-in hybrid electric drive system for medium- and heavy-duty vehicles
- Ultra-low emission NG engine for on-road heavy-duty vehicles



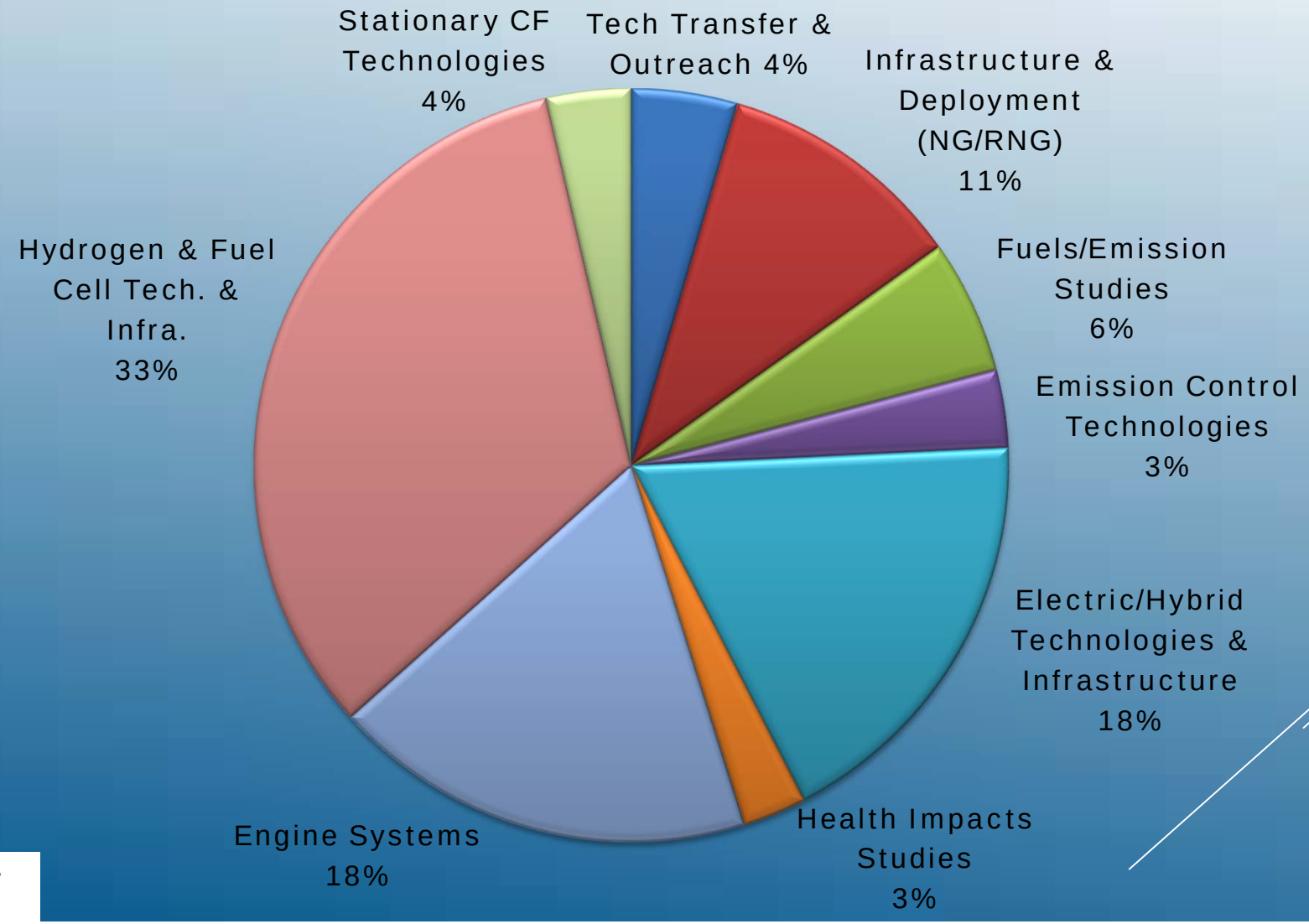




DRAFT 2017 PLAN UPDATE



DRAFT 2017 PLAN UPDATE



$16.5M

PROPOSED DISTRIBUTION

	2016 Plan	Final Draft 2017 Plan
Electric/Hybrids Technologies & Infra.	30%	18%
H2/Fuel Cells Technologies & Infra.	30%	33%
Engine Systems	10%	18%
Fueling Infra. & Deployment (NG/RNG)	8%	11%
Emissions Control Technologies	3%	3%
Health Impacts Studies	3%	3%
Fuels & Emissions Studies	6%	6%
Stationary Clean Fuel Technologies	4%	4%
Tech Assessment/Transfer & Outreach	6%	4%
	100%	100%

ANNUAL REPORT & PLAN UPDATE DEVELOPMENT

➢ Technology Committee	October 21, 2016 (Draft 2017 Plan Update)
➢ Advisory Group Review	September 1, 2016 January 19, 2017
➢ Technology Committee	February 17, 2017
➢ Board Approval	March 3, 2017
➢ Due to State Legislature	March 31, 2017

RECOMMENDED ACTIONS

- Approve Clean Fuels Program 2016 Annual Report
- Adopt Clean Fuels Program Plan Update for 2017
- Approve resolution finding no duplicate projects or programs funded by other state/local agencies
- Receive and file and adopt membership changes to TAAG and CFAG, respectively
- Direct staff to forward documents to State Legislative Analyst by March 31, 2017

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 38

REPORT: Annual RECLAIM Audit Report for 2015 Compliance Year

SYNOPSIS: The annual report on the NOx and SOx 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 twenty-second 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 2015 Compliance Year is included with the report.

COMMITTEE: Stationary Source, February 17, 2017, Reviewed

RECOMMENDED ACTION:
Approve the attached annual report.

Wayne Nastri
Executive Officer

LT:DL

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 NOx and SOx. 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 and annual 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 2015 (which encompasses the time period for Cycle 1 from January 1, 2015 to December 31, 2015 and for Cycle 2 from July 1, 2015 to June 30, 2016). Based on audited emissions in this report and previous annual reports, SCAQMD staff has determined that RECLAIM met its emissions goals for Compliance Year 2015, as well as for all previous compliance years with the only exception of NOx emissions in Compliance Year 2000. For that year, NOx emissions exceeded programmatic allocations (by 11%) primarily due to emissions from electric generating facilities during the California energy crisis. For Compliance Year 2015, audited NOx emissions were 25% less than programmatic NOx allocations and audited SOx emissions were 26% less than programmatic SOx allocations.

Audit Findings

The audit of the RECLAIM Program's Compliance Year 2015 and trades of RTCs that occurred during calendar year 2016 show:

- ***Overall Compliance*** – Audited NOx and SOx emissions from RECLAIM facilities were significantly below programmatic allocations.

- ***Universe*** – The RECLAIM universe consisted of 272 facilities as of June 30, 2015. One facility was included, no facility was excluded, and five facilities in the RECLAIM universe shut down during Compliance Year 2015. Thus, 268 facilities were in the RECLAIM universe on June 30, 2016, the end of the Compliance Year 2015.

  One facility was newly included in NOx RECLAIM because they reported NOx emissions from permitted sources in excess of four tons a year. Of the five facilities that shut down, one facility sold its brand and demolished the facility, and two other facilities consolidated their operations into other company-owned RECLAIM facilities. The fourth facility cited more attractive utility of land and resources, cost of meeting air pollution regulations, including RECLAIM, Rule 1156 and the SCAQMD compliance burden, and an unfriendly business environment as the

reasons for shutdown. Finally, the fifth facility sold both their equipment and property. Staff attempted to contact its parent company for a more descriptive reason for the shutdown, but received no response.

- ***Facility Compliance*** – The vast majority of RECLAIM facilities complied with their allocations during the 2015 compliance year (94% of NOx facilities and 97% of SOx facilities). Eighteen facilities (six percent of total facilities) exceeded their allocations (17 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocation) during Compliance Year 2015. The 17 facilities that exceeded their NOx allocations had total NOx emissions of 387.1 tons and did not have adequate allocations to offset 45.7 of those tons. The exceedances represent 0.47% of total RECLAIM NOx universe allocations and 11.8% of total NOx emissions from the 17 facilities. The one SOx facility that exceeded its SOx allocation had total SOx emissions of 2.7 tons and did not have adequate allocations to offset 0.2 tons. This exceedance represents 0.01% of total RECLAIM SOx universe allocations and 7.4% of total SOx emissions from this facility. Pursuant to Rule 2010(b)(1)(A), all 18 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 2015 allocations.

- ***Job Impacts*** – Based on a survey of the RECLAIM facilities, the RECLAIM program had minimal impact on employment during the 2015 compliance year, which is consistent with previous years. RECLAIM facilities reported an overall net gain of 1,329 jobs, representing 1.21% of their total employment. One of the five RECLAIM facilities that shut down during Compliance Year 2015 cited RECLAIM as a contributing factor to the decision to shut down. No other facilities reported a gain or loss of jobs due to RECLAIM. 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 2016 was lower in terms of number of trades (by 7%), lower with respect to volume (by 31%), and significantly lower with respect to total value (by 40%) when compared to calendar year 2015. A total of over $1.47 billion in RTCs has been traded since the adoption of RECLAIM, of which $118.6 million occurred in calendar year 2016 (compared to $197.1 million in calendar year 2015), excluding swaps. In calendar year 2016, there was a set of four trades between a RECLAIM facility that had discontinued its cement manufacturing operations, and its wholly-owned subsidiary. These trades were not at arms-length and RTC prices were set arbitrarily. As a result, they were excluded from RTC average price computations.

The annual average prices of discrete-year NOx and SOx RTCs for Compliance Years' 2015, 2016, and 2017 and infinite-year block (IYB) NOx and SOx RTCs traded in calendar year 2016 (excluding trades that were not at arms-length) were below the applicable review thresholds for average RTC prices. The annual average prices of RTCs traded during calendar years 2015 and 2016 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 2015 and 2016

	Average Price ($/ton)				**Review Thresholds ($/ton)**	
Year Traded	**2014 NOx RTC**	**2015 NOx RTC**	**2016 NOx RTC**	**2017 NOx RTC**	**Rule 2015 (b)(6)**	**Health and Safety Code §39616(f)**
2015	$1,039	$1,642	$2,833	$4,020	$15,000	$42,627
2016		$1,626	$2,932	$6,606		
Year Traded	**2014 SOx RTC**	**2015 SOx RTC**	**2016 SOx RTC**	**2017 SOx RTC**	**Rule 2015 (b)(6)**	**Health and Safety Code §39616(f)**
2015	$483	$380	None traded	None traded	$15,000	$30,691
2016		$540	$1,255	None traded		

Table 2 – Average Prices for IYB RTCs Traded during Calendar Years 2015 and 2016

RTCs	**Average Price ($/ton)**		**Review Threshold ($/ton) [Health and Safety Code §39616(f)]**
	Traded in 2015	Traded in 2016	
NOx	$199,685	$380,057	$639,399
SOx	$53,665	$50,000	$460,367

- ***Role of Investors*** – Investors were active in the RTC market. Based on both overall trading values and volume of NOx trades with price, investors' involvement in 2016 was less when compared to calendar year 2015. However, with respect to value and volume of SOx trades with price, investors' involvement increased. Investors were involved in 137 of the 196 discrete NOx trades with price, and 6 of the 8 discrete SOx trades with price. With respect to IYB trades, investors' participation was significant and investors were involved with 16 of 20 IYB NOx trades with price, and the one IYB SOx trade with price. Compared to calendar year 2015, investor holdings of total IYB NOx RTCs and IYB SOx RTCs increased from 1.9% to 3.1% for IYB NOx RTCs, and from 3.3% to 5.0% for IYB SOx RTCs at the end of calendar year 2016. Investors purchase RTCs, but are not RECLAIM facilities or brokers. (Brokers typically do not purchase RTCs, but facilitate trades.)

- ***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 2015 Compliance Year

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for 2015 Compliance Year

March 3, 2017

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Wayne Nastri

Deputy Executive Officer
Engineering & Permitting
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William Wong, Principal Deputy District Counsel

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

GOVERNING BOARD

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Speaker of the Assembly
Appointee

Vice Chairman: Ben Benoit
Mayor Pro Tem, Wildomar
Cities of Riverside County

Members:

Marion Ashley
Supervisor, Fifth District
County of Riverside

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Councilmember, Fifteenth District
City of Los Angeles Representative

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Cities of Los Angeles County/Eastern Region

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County of Los Angeles

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Councilmember, Rolling Hills Estates
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Shawn Nelson
Supervisor, Fourth District
County of Orange

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

Dwight Robinson
Councilmember, Lake Forest
Cities of Orange County

Janice Rutherford
Supervisor, Second District
County of San Bernardino

EXECUTIVE OFFICER
Wayne Nastri

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LIST OF ABBREVIATIONS

AAQS	Ambient Air Quality Standards
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
CCR	California Code of Regulations
CEMS	Continuous Emissions Monitoring System(s)
CEQA	California Environmental Quality Act
CGA	Cylinder Gas Audit
CPMS	Continuous Process Monitoring System(s)
DOGGR	Division of Oil, Gas, and Geothermal Resources
EDR	Electronic Data Reporting
EGF	Electricity Generating Facility
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
ODC	Ozone Depleting Compound
OEHHA	Office of Environmental Health Hazard Assessment
QCER	Quarterly Certification of Emissions Report
PPA	Purchase Power Agreement
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
SOON	Surplus Off-Road Opt-In for NOx
SSC	Stationary Source Committee
TAC	Toxic Air Contaminant
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WATERS	Web Access To Electronic Reporting System

EXECUTIVE SUMMARY

Introduction

The South Coast Air Quality Management District (SCAQMD) Governing Board adopted the REgional CLean Air Incentives Market (RECLAIM) program on October 15, 1993. The RECLAIM program represented a significant departure from traditional command-and-control regulations. RECLAIM's objective is to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. This is accomplished by establishing facility-specific emissions reduction targets without being prescriptive regarding the method of attaining compliance with the targets. Each facility may determine for itself the most cost-effective approach to reducing emissions, including reducing emissions at their facility, and/or purchasing RECLAIM Trading Credits (RTCs) from other RECLAIM facilities, or from other RTC holders.

Rule 2015 - Backstop Provisions includes provisions for annual program audits focusing on specific topics, as well as a one-time comprehensive audit of the program's first three years, to ensure that RECLAIM is meeting all state and federal requirements and other performance criteria. Rule 2015 also provides backstop measures if the specific criteria are not met. This report constitutes the Rule 2015 annual program audit report for Compliance Year 2015 (January 1 through December 31, 2015 for Cycle 1 and July 1, 2015 through June 30, 2016 for Cycle 2 facilities). This annual audit report covers activities for the twenty-second 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, 2015, the overall changes in RECLAIM participants were 130 facilities included into the program, 70 facilities excluded from the program, and 182 facilities ceased operation. Thus, the RECLAIM universe consisted of 272 active facilities at the end of Compliance Year 2014 (December 31, 2014 for Cycle 1 facilities and June 30, 2015 for Cycle 2 facilities). During Compliance Year 2015 (January 1, 2015 through December 31, 2015 for Cycle 1 facilities and July 1, 2015 through June 30, 2016 for Cycle 2 facilities), one facility was included into the RECLAIM universe, no facility was excluded, and five facilities (one facility in both the NOx and SOx universes and four in the NOx universe only) shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of four facilities in the universe, bringing the total number of active RECLAIM facilities to 268 as of the end of Compliance Year 2015.

Chapter 2: RTC Allocations and Trading

On November 5, 2010, the Governing Board adopted amendments to SOx RECLAIM to phase in SOx reductions beginning in Compliance Year 2013 and full implementation in Compliance Year 2019 and beyond. The amendments will result in an overall reduction of 48.4% (or 5.7 tons/day) in SOx allocations when

fully implemented (Compliance Year 2019 and beyond). For Compliance Year 2015, the third year of implementation, the SOx allocation supply was reduced by 34% (or 4.0 tons/day, which is the same reduction as the previous compliance year) to 2,839 tons. There was no programmatic allocation reduction in NOx RTCs during Compliance Year 2015. However, on December 4, 2015, the Governing Board adopted amendments to NOx RECLAIM to phase in additional NOx reductions which began in Compliance Year 2016 and continue through Compliance Year 2022. The amendment will result in an overall NOx reduction of 45% (or 12 tons/day) when fully implemented for Compliance Year 2022 and beyond.

The overall NOx RTC supply increased by 11.6 tons and the SOx RTC supply decreased by 3.7 tons during Compliance Year 2015. These changes were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12).

In calendar year 2016, there was a set of four trades between a RECLAIM facility that had discontinued its cement manufacturing operations, and its wholly-owned subsidiary. These trades were not at arms-length and RTCs prices were set arbitrarily. As a result, they were considered as “swap trades" and were excluded from RTC average price computations. During calendar year 2016, there were 329 RTC trade registrations with a total value of $118.6 million traded, excluding the values reported for swap trades.

Since the inception of the RECLAIM program in 1994, a total value of over $1.47 billion dollars has been traded in the RTC trading market, excluding swap trades. RTC trades are reported to SCAQMD as either discrete-year RTC trades or infinite-year block (IYB) trades (trades that involve blocks of RTCs with a specified start year and continuing into perpetuity). In terms of volume traded in calendar year 2016, a total of 2,173 tons of discrete-year NOx RTCs, 617 tons of discrete-year SOx RTCs, 613 tons of IYB NOx RTCs and 392 tons of IYB SOx RTCs were traded. The RTC trading market activity decreased during calendar year 2016 compared to calendar year 2015, in terms of number of trades (by 7%), in total volume excluding swaps (by 31%), and in total value excluding swaps (by 40%).

The annual average prices of discrete-year NOx RTCs traded during calendar year 2016 were $1,626, $2,932, and $6,606 per ton for Compliance Years’ 2015, 2016, and 2017 RTCs, respectively. The annual average prices for discrete-year SOx RTCs traded during the same period were $540 and $1,255 per ton for Compliance Years’ 2015 and 2016 RTCs, respectively.

Prices for discrete-year NOx and SOx RTCs for all compliance years are still well below the $42,627 per ton of NOx and $30,691 per ton of SOx discrete-year RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f), as well as the $15,000 per ton threshold pursuant to Rule 2015(b)(6).

The annual average price during calendar year 2016 for IYB NOx RTCs was $380,057 per ton and the annual average price for IYB SOx RTCs was $50,000 per ton. Therefore, annual average IYB RTC prices did not exceed the $639,399 per ton of IYB NOx RTCs or the $460,367 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 2016. They were involved in 137 of the 196 discrete-year NOx trade registrations and six of the eight discrete-year SOx trade registrations with price. Investors were also involved in 16 of 20 IYB NOx and the one IYB SOx trade with price. Investors were involved in 63% of total value and 62% of total volume for discrete-year NOx trades, and 64% of total value and 54% of total volume for discrete-year SOx trades. In addition, investors were involved in 25% of total value and 19% of total volume for IYB NOx trades with price. An investor was involved in the sole IYB SOx trade with price. At the end of calendar year 2016, investors' holdings of IYB NOx RTCs and IYB SOx RTCs were significantly higher at 3.1% and 5.0% of the total RECLAIM RTCs, respectively, compared to that of calendar year 2015.

Chapter 3: Emission Reductions Achieved

For Compliance Year 2015, aggregate NOx emissions were below total allocations by 25% and aggregate SOx emissions were below total allocations by 26%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2015. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports. Therefore, based on audited emissions, RECLAIM achieved its targeted emission reductions for Compliance Year 2015. With respect to the Rule 2015 backstop provisions, Compliance Year 2015 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 2015, a total of five NOx RECLAIM facilities had NSR NOx emission increases, and one SOx RECLAIM facility had an NSR SOx emission increase 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 2015, RECLAIM demonstrated federal equivalency with a programmatic NOx offset ratio of 39-to-1 and SOx offset ratio of 4,112-to-1 based on the compliance year's total unused allocations and total NSR emission increases for both NOx and SOx. 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 2015. 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), which is at least as stringent as federal Lowest Achievable Emission Rate (LAER). The same BACT guidelines are used to determine applicable BACT to RECLAIM and non-RECLAIM facilities.

Chapter 5: Compliance

Of the 282 NOx RECLAIM facilities audited during Compliance Year 2015, a total of 265 facilities (94%) complied with their NOx allocations, and 32 of the 33 SOx facilities (97%) complied with their SOx allocations. Eighteen facilities exceeded their allocations (17 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocation) during Compliance Year 2015. The 17 facilities that exceeded their NOx allocations had aggregate NOx emissions of 387.1 tons and did not have adequate allocations to offset 45.7 tons (or 11.8%) of their combined emissions. The one SOx facility that exceeded its SOx allocation had total SOx emissions of 2.7 tons and did not have adequate allocations to offset 0.2 tons (or 7.4%). The NOx and SOx exceedance amounts are relatively small compared to the overall NOx and SOx allocations for Compliance Year 2015 (0.47% of total NOx allocations and 0.01% of total SOx allocations). 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 2015 allocations. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2015 (*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 2015 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 1,329 jobs, representing 1.21% of their total employment. One of the five RECLAIM facilities that shut down during Compliance Year 2015 cited RECLAIM as a factor contributing to the decision to shutdown. No other facilities reported any gain or loss of jobs due to RECLAIM.

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 2015 NOx emissions decreased 2.7% relative to Compliance Year 2014, and Compliance Year 2015 SOx emissions were 3.7% less than the previous year. Quarterly calendar year 2015 NOx emissions fluctuated within 10% of the mean NOx emissions for the year. Quarterly calendar year 2015 SOx emissions fluctuated within seven 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 2016, 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 applicable, 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.

INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) REgional CLean Air Incentives Market (RECLAIM) program was adopted in October 1993 and replaced certain command-and-control rules regarding oxides of nitrogen (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 2015 Compliance Year Audit.

This report presents the annual program audit and progress report of RECLAIM's twenty-second compliance year (January 1 through December 31, 2015 for Cycle 1 and July 1, 2015 through June 30, 2016 for Cycle 2 RECLAIM facilities), also known as Compliance Year 2015. 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, 2015 (covered under the Annual RECLAIM Audit Report for 2014 Compliance Year), then discusses changes to the RECLAIM universe of sources in detail through the end of Compliance Year 2015.
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

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, 2015, the overall changes in RECLAIM participants were 130 facilities included into the program, 70 facilities excluded from the program, and 182 facilities ceased operation. Thus, the RECLAIM universe consisted of 272 active facilities at the end of Compliance Year 2014 (December 31, 2014 for Cycle 1 facilities and June 30, 2015 for Cycle 2 facilities). During Compliance Year 2015 (January 1, 2015 through December 31, 2015 for Cycle 1 facilities and July 1, 2015 through June 30, 2016 for Cycle 2 facilities), one facility was included into the RECLAIM universe, no facility was excluded, and five facilities (one facility in both the NOx and SOx universes and four in the NOx universe only) shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of four facilities in the universe, bringing the total number of active RECLAIM facilities to 268 as of the end of Compliance Year 2015.

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 reported 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 reported 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 NOx and/or SOx emissions from permitted sources above the four ton per year threshold; or
- It ceases to be categorically excluded and its reported NOx and/or SOx 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. Prior to an October 7, 2016 amendment of Rule 2002, facilities that shutdown were allowed to retain all of their RTC holdings and participate in the trading market. For NOx RECLAIM facilities listed in Tables 7 and 8 that shutdown on or after October 7, 2016, the Rule 2002 amendment established a methodology to calculate an amount of reduction that must be made to a facility's future years NOx RTC holdings. A shutdown facility may trade future year RTCs that remain after the RTC adjustment is completed, if any. If the calculated reduction amount exceeds a facility's holdings for any future compliance year, the facility must purchase and surrender sufficient RTCs to fulfill the entire reduction requirement. This situation may result if the facility previously sold its future year allocations.

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 NOx or SOx 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 activities/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, 2015 (the last day of Compliance Year 2014 for Cycle 2 facilities) were: the inclusion of 130 facilities (including 34 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 70 facilities, and the shutdown of 182 facilities. Thus, the net change in the RECLAIM universe from October 15, 1993 through June 30, 2015 was a decrease of 122 facilities from 394 to 272 facilities. In Compliance Year 2015 (January 1, 2015 through December 31, 2015 for Cycle 1 facilities and July 1, 2015 through June 30, 2016 for Cycle 2 facilities), one facility was included, no facility was excluded, and five facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 268 facilities. The Compliance Year 2015 RECLAIM universe includes 237 NOx-only, no SOx-only, and 31 both NOx and SOx RECLAIM facilities. The list of active facilities in the RECLAIM universe as of the end of Compliance Year 2015 is provided in Appendix A.

Facility Inclusions and Exclusions

One facility was included in NOx RECLAIM pursuant to Rule 2001(b) – Criteria for Inclusion in RECLAIM because it reported NOx emissions from permitted sources in excess of four tons a year. Appendix B lists the facility and the reason for its inclusion. No facility was excluded from the RECLAIM universe during Compliance Year 2015. Currently, there are 29 facilities in various stages of the inclusion review process. 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

Five RECLAIM facilities permanently ceased operations in Compliance Year 2015. One sold its brand and demolished the facility. Staff was not able to obtain further clarification regarding the shutdown. Two other facilities consolidated their operations into other company-owned RECLAIM facilities. The fourth facility cited more attractive utility of land and resources, cost of meeting air pollution regulations, including RECLAIM, Rule 1156 and the SCAQMD

compliance burden, and an unfriendly business environment as reasons for shutdown. The fifth facility sold its equipment and property to a third party. Four of the five facilities permanently ceasing operations were in NOx RECLAIM and the remaining shutdown facility was in both NOx and SOx RECLAIM. Appendix C lists these facilities and provides brief descriptions of the reported reasons for their closures.

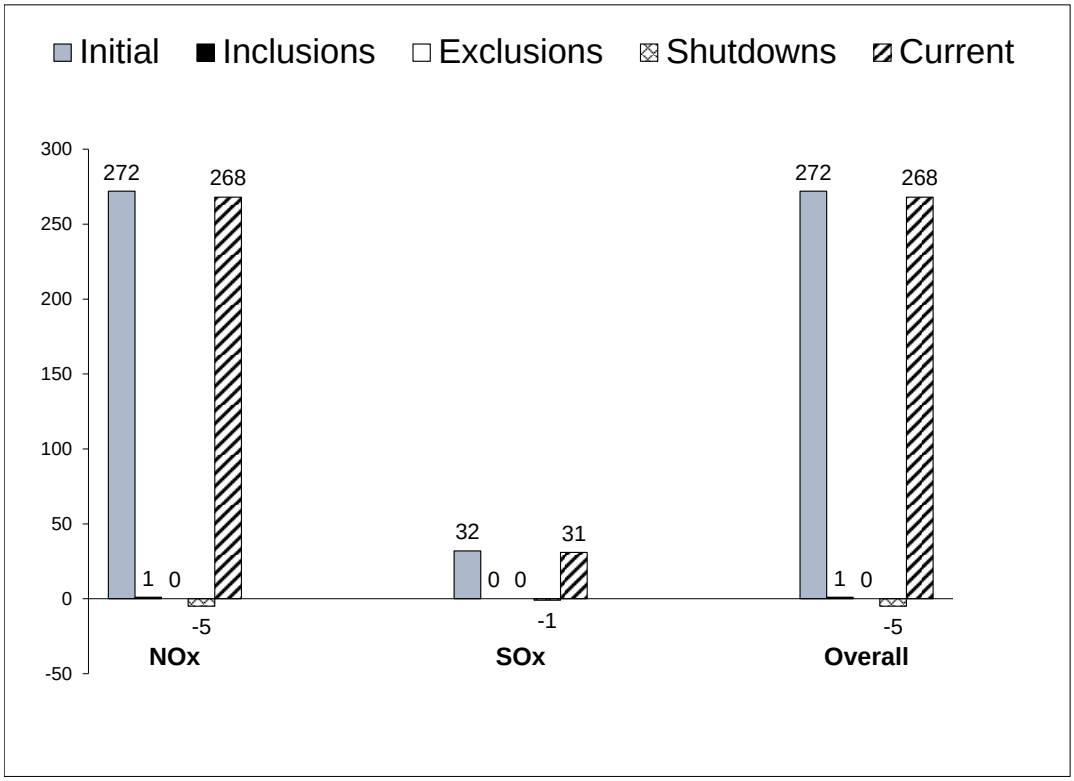
The above mentioned changes to the RECLAIM Universe resulted in a net decrease of four facilities in the RECLAIM universe during Compliance Year 2015. Table 1-1 summarizes overall changes in the RECLAIM universe between the start of the program and end of Compliance Year 2015 (December 31, 2015 for Cycle 1 facilities and June 30, 2016 for Cycle 2 facilities). Changes to the RECLAIM universe that occurred in Compliance Year 2015 are illustrated in Figure 1-1.

Table 1-1
RECLAIM Universe Changes

	NOx Facilities	SOx Facilities	Total* Facilities
Universe – October 15, 1993 (Start of Program)	392	41	394
Inclusions **–** October 15, 1993 through Compliance Year 2014	130	13	130
Exclusions **–** October 15, 1993 through Compliance Year 2014	-69	-4	-70
Shutdowns **–** October 15, 1993 through Compliance Year 2014	-181	-18	-182
Universe – June 30, 2015	272	32	272
Inclusions **–** Compliance Year 2015	1	0	1
Exclusions **–** Compliance Year 2015	0	0	0
Shutdowns **–** Compliance Year 2015	-5	-1	-5
Universe – End of Compliance Year 2015	268	31	268

* "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 2015



CHAPTER 2
RTC ALLOCATIONS AND TRADING

Summary

On November 5, 2010, the Governing Board adopted amendments to SOx RECLAIM to phase in SOx reductions beginning in Compliance Year 2013 and full implementation in Compliance Year 2019 and beyond. The amendments will result in an overall reduction of 48.4% (or 5.7 tons/day) in SOx allocations when fully implemented (Compliance Year 2019 and beyond). For Compliance Year 2015, the third year of implementation, the SOx allocation supply was reduced by 34% (or 4.0 tons/day, which is the same reduction as the previous compliance year) to 2,839 tons. There was no programmatic allocation reduction in NOx RTCs during Compliance Year 2015. However, on December 4, 2015, the Governing Board adopted amendments to NOx RECLAIM to phase in additional NOx reductions which began in Compliance Year 2016 and continue through Compliance Year 2022. The amendment will result in an overall NOx reduction of 45% (or 12 tons/day) when fully implemented for Compliance Year 2022 and beyond.

The overall NOx RTC supply increased by 11.6 tons and the SOx RTC supply decreased by 3.7 tons during Compliance Year 2015. These changes were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12).

In calendar year 2016, there was a set of four trades between a RECLAIM facility that had discontinued its cement manufacturing operations, and its wholly-owned subsidiary. These trades were not at arms-length and RTCs prices were set arbitrarily. As a result, they were considered as "swap trades" and were excluded from RTC average price computations. During calendar year 2016, there were 329 RTC trade registrations with a total value of $118.6 million traded, excluding the values reported for swap trades.

Since the inception of the RECLAIM program in 1994, a total value of over $1.47 billion dollars has been traded in the RTC trading market, excluding swap trades. RTC trades are reported to SCAQMD as either discrete-year RTC trades or infinite-year block (IYB) trades (trades that involve blocks of RTCs with a specified start year and continuing into perpetuity). In terms of volume traded in calendar year 2016, a total of 2,173 tons of discrete-year NOx RTCs, 617 tons of discrete-year SOx RTCs, 613 tons of IYB NOx RTCs and 392 tons of IYB SOx RTCs were traded. The RTC trading market activity decreased during calendar year 2016 compared to calendar year 2015, in terms of number of trades (by 7%), in total volume excluding swaps (by 31%), and in total value excluding swaps (by 40%).

The annual average prices of discrete-year NOx RTCs traded during calendar year 2016 were $1,626, $2,932, and $6,606 per ton for Compliance Years' 2015, 2016, and 2017 RTCs, respectively. The annual average prices for discrete-year SOx RTCs traded during the same period were $540 and $1,255 per ton for Compliance Years' 2015 and 2016 RTCs, respectively.

Prices for discrete-year NOx and SOx RTCs for all compliance years are still well below the $42,627 per ton of NOx and $30,691 per ton of SOx discrete-year RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f), as well as the $15,000 per ton threshold pursuant to Rule 2015(b)(6).

The annual average price during calendar year 2016 for IYB NOx RTCs was $380,057 per ton and the annual average price for IYB SOx RTCs was $50,000 per ton. Therefore, annual average IYB RTC prices did not exceed the $639,399 per ton of IYB NOx RTCs or the $460,367 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 2016. They were involved in 137 of the 196 discrete-year NOx trade registrations and six of the eight discrete-year SOx trade registrations with price. Investors were also involved in 16 of 20 IYB NOx and the one IYB SOx trade with price. Investors were involved in 63% of total value and 62% of total volume for discrete-year NOx trades, and 64% of total value and 54% of total volume for discrete-year SOx trades. In addition, investors were involved in 25% of total value and 19% of total volume for IYB NOx trades with price. An investor was involved in the sole IYB SOx trade with price. At the end of calendar year 2016, investors' holdings of IYB NOx RTCs and IYB SOx RTCs were significantly higher at 3.1% and 5.0% of the total RECLAIM RTCs, respectively, compared to that of calendar year 2015.

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). For facilities that existed prior to January 1, 1993, the allocation is calculated based on each facility's historic production levels as reported to SCAQMD in its annual emission reports (AERs), NOx emission factors listed in Tables 1, 3, and 6 of Rule 2002 or SOx emission factors in Tables 2 and 4 of Rule 2002 for the appropriate equipment category, any qualified[1] external offsets previously provided by the facility, and any unused Emission Reduction Credits (ERCs) generated at and held by the facility. Facilities entering RECLAIM after 1994 are issued allocations, if eligible, for the compliance year of entry and all years after, and Compliance Year 1994 allocations (also known as the facility's "Starting Allocation") for the sole purpose of establishing New Source Review trigger level.

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

[1] Only external offsets provided at a one-to-one offset ratio after the base year used for allocation quantification purposes.

assigned to either Cycle 1 or Cycle 2 and the RTCs it is issued (if any) have corresponding periods of validity.

The issuance of allocations for future years provides RECLAIM facilities guidance regarding their future emission reduction requirements. Facilities can plan their compliance strategies by reducing actual emissions or securing needed RTCs through trade registrations (or a combination of the two), based on their operational needs.

RECLAIM facilities may acquire RTCs issued for either cycle through trading and apply them to emissions, provided that the RTCs are used for emissions occurring within the RTCs' period of validity and the trades are made during the appropriate time period. RECLAIM facilities have until 30 days after the end of each of the first three quarters of each compliance year to reconcile their quarterly and year-to-date emissions, and until 60 days after the end of each compliance year to reconcile their last quarter and total annual emissions by securing adequate RTCs. Please note that, although other chapters in this report present and discuss Compliance Year 2015 data, RTC trading and price data discussed in this chapter are for calendar year 2016.

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[2], 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. The SCAQMD Governing Board may adopt additional rules that affect RTC supply. Changes in the RTC supply during Compliance Year 2015 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 of 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. Similarly, if an existing facility that was

[2] 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.

previously included in RECLAIM is subsequently excluded because it is determined to be categorically excluded or exempt pursuant to Rule 2001(i) or to not have emitted four tons or more of NOx or SOx in a year, any RTCs it was issued upon entering RECLAIM are removed from the market upon its exclusion.

The sole NOx facility included in Compliance Year 2015 did not receive any allocation based on reported emissions.

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 NOx and 42.3 tons of SOx for Compliance Year 1999, 101.8 tons of NOx and 41.4 tons of SOx for Compliance Year 2000, and 98.4 tons of NOx and 40.2 tons of SOx for each subsequent Compliance Year 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 NOx allocations, the NOx historical baseline Clean Fuel Adjustments for Compliance Year 2007 and subsequent years held by the facility were also reduced by the appropriate factors as stated in Rule 2002(f)(1)(A). On the other hand, Rule 2002(c)(12) 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 2015, the overall effect of adjusting NOx allocations to account for these differences was a total of 11.6 tons of NOx RTCs (0.1% of total NOx allocation for Compliance Year 2015) added to, and 3.7 tons of SOx RTCs (0.1% of total SOx allocation for Compliance Year 2015) deducted from, refineries' Compliance Year 2015 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) in their AERs. In the case where a facility's AER reported activity levels are updated within five years of the

AER due date, its allocation is adjusted accordingly[3]. There were no changes in RTC allocations due to activity corrections in Compliance Year 2015.

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 2015.

Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net increase of 11.6 tons of NOx RTCs (0.1% of the total) and a decrease of 3.7 tons of SOx RTCs (0.1% of the total) for Compliance Year 2015. Table 2-1 summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2015 pursuant to Rule 2002.

Table 2-1
Changes in NOx and SOx RTC Supplies during Compliance Year 2015 (tons/year)

Source	NOx	SOx
Universe changes	0	0
Clean Fuel/Reformulated Gasoline	11.6	-3.7
Activity corrections	0	0
MSERCs	0	0
Net change	**11.6**	**-3.7**

Note: The data in this table represents the changes that occurred over the course of Compliance Year 2015 to the Compliance Year 2015 aggregate NOx and SOx RTC supplies originally issued pursuant to Rule 2002, not the difference between 2015 aggregate RTC supply and that for any other compliance year.

Allocation Reduction Resulting from BARCT Review

Pursuant to California Health and Safety Code §40440, SCAQMD is required to monitor the advancement in BARCT and periodically re-assess the RECLAIM program to ensure that RECLAIM achieves equivalent emission reductions to the command-and-control BARCT rules it subsumes. This assessment is done periodically as part of AQMP development. This process resulted in 2003 AQMP Control Measure #2003 CMB-10 – Additional NOx Reductions for RECLAIM (NOx) calling for additional NOx reductions from RECLAIM sources. SCAQMD staff started the rule amendment process in 2003, including a detailed analysis of

[3] Pursuant to Rule 2002(b)(5) as amended on December 4, 2015, any AERs (including corrections) submitted more than five years after the original due date are not considered in the RTC quantification process.

control technologies that qualified as BARCT for NOx, and held lengthy discussions with stakeholders—including regulated industry, environmental groups, the California Air Resources Board (CARB), and the United States Environmental Protection Agency (USEPA). On January 7, 2005, the Governing Board implemented CMB-10 by adopting changes to the RECLAIM program that resulted in a 22.5% reduction of NOx allocations from all RECLAIM facilities. The reductions were phased in commencing in Compliance Year 2007 and have been fully implemented since Compliance Year 2011.

On November 5, 2010, the Governing Board adopted changes to the RECLAIM program implementing the 2007 AQMP Control Measure CMB-02 – Further SOx Reductions for RECLAIM (SOx). These amendments resulted in a BARCT-based overall reduction of 5.7 tons SOx per day when fully implemented in Compliance Year 2019 (the reductions are being phased in from Compliance Year 2013 through Compliance Year 2019: 3.0 tons per day in 2013; 4.0 tons per day in years 2014, 2015, and 2016; 5.0 tons per day in 2017 and 2018; and 5.7 tons per day starting in 2019 and continuing thereafter). This reduction in SOx is an essential part of the South Coast Air Basin's effort in attaining the federal 24-hour average PM2.5 standard by the year 2020.

Similarly, the 2012 AQMP adopted by the Governing Board in 2012, included Control Measure CMB-01- Further NOx Reductions for RECLAIM that identified a new group of RECLAIM NOx emitting equipment that should be reviewed for new BARCT. The rule making process for the amendment to the NOx RECLAIM program implementing CMB-01 started in 2012. On December 4, 2015, the Governing Board adopted amendments to the RECLAIM rules that resulted in an additional reduction of 12 tons of NOx per day (45% reduction) when fully implemented in Compliance Year 2022. The reductions are being phased-in with 2 tons per day in Compliance Year 2016 and 2017, 3 tons per day in Compliance Year 2018, 4 tons per day in Compliance Year 2019, 6 tons per day in Compliance Year 2020, 8 tons per day in Compliance Year 2021 and 12 tons per day in Compliance Year 2022 and thereafter.

Figure 2-1 illustrates the total NOx RTC supply through the end of Compliance Year 2023 incorporating all the changes discussed above. Figure 2-2 illustrates the total SOx RTC supply through the end of Compliance Year 2020 incorporating the changes discussed.

Figure 2-1
NOx RTC Supply

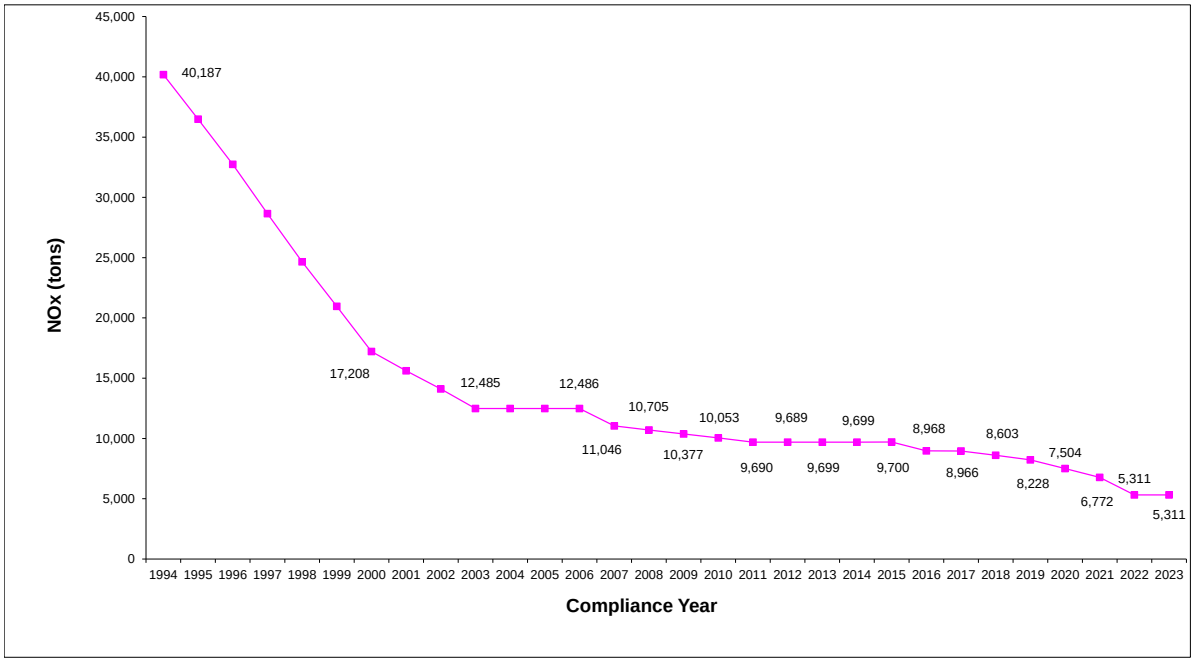
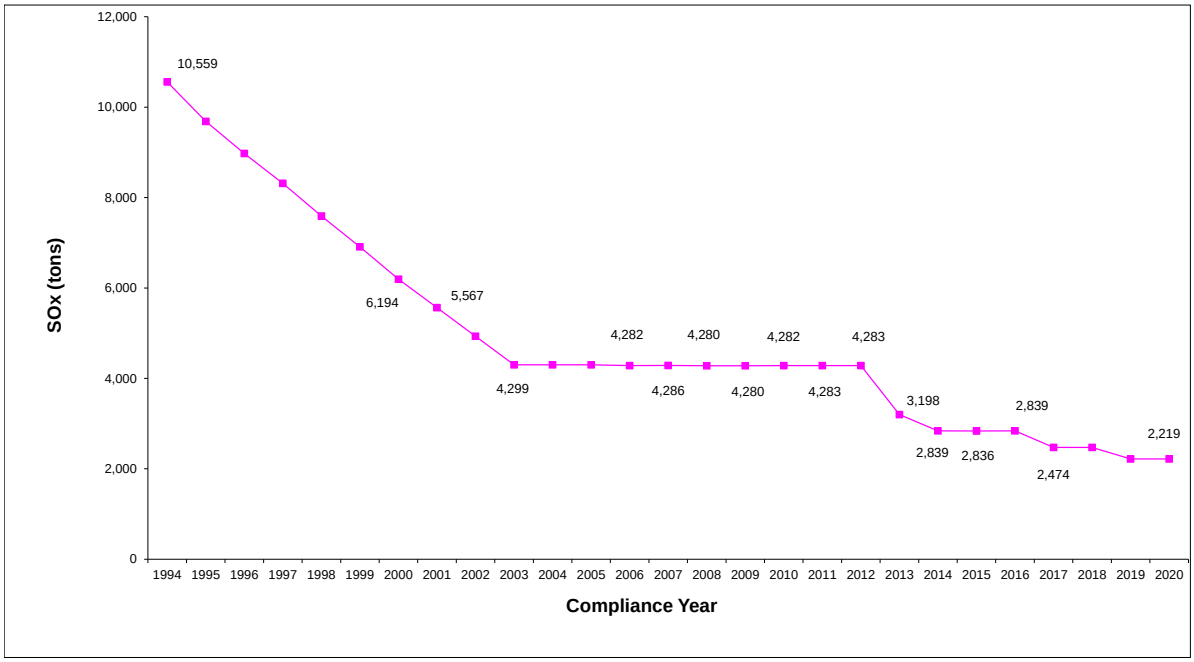


Figure 2-2
SOx RTC Supply



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 potential rule adoption activities for calendar year 2017.

RTC Trades

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 can be somewhat arbitrary and, therefore, are excluded from the calculation of annual average prices. Annual average prices for discrete-year RTCs are determined by averaging prices of RTCs for each compliance year, while the annual average price for IYB RTCs are determined based on the amount of IYB RTCs (*i.e.,* the amount of RTCs in the infinite stream) regardless of the start year.

RTC Price Thresholds for Program Review

Rule 2015(b)(6) specifies that, if the annual average price of discrete-year NOx or SOx RTCs exceeds $15,000 per ton, the Executive Officer will conduct an evaluation and review of the compliance and enforcement aspects of RECLAIM. The Governing Board has also established average RTC price overall program review thresholds pursuant to Health and Safety Code §39616(f). Unlike the $15,000 per ton threshold for review of the compliance and enforcement aspects of RECLAIM, these overall program review thresholds are adjusted by CPI each year. In addition, according to Rule 2002(f)(1)(S), if the annual average price of discrete-year 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. Similarly, Rule 2002(f)(1)(H) specifies that in the event that the NOx RTC prices exceed $22,500 per ton (current compliance year credits) based on the 12-month rolling

average, or exceed $35,000 per ton (current compliance year credits) based on the 3-month rolling average calculated pursuant to subparagraph (f)(1)(E), the Executive Officer will report the determination to the Governing Board. If the Governing Board finds that the 12-month rolling average RTC price exceeds $22,500 per ton or the 3-month rolling average RTC price exceeds $35,000 per ton, then the Non-tradable/Non-usable NOx RTCs, as specified in subparagraphs (f)(1)(B) and (f)(1)(C) valid for the period in which the RTC price is found to have exceeded the applicable threshold, shall be converted to Tradable/Usable NOx RTCs upon Governing Board concurrence. For RTC trades occurring in calendar year 2016, the overall program review thresholds in 2016 dollars, pursuant to Health and Safety Code §39616(f), are $42,627 per ton of discrete-year NOx RTCs, $30,691 per ton of discrete-year SOx RTCs, $639,399 per ton of IYB NOx RTCs, and $460,367 per ton of IYB SOx RTCs.

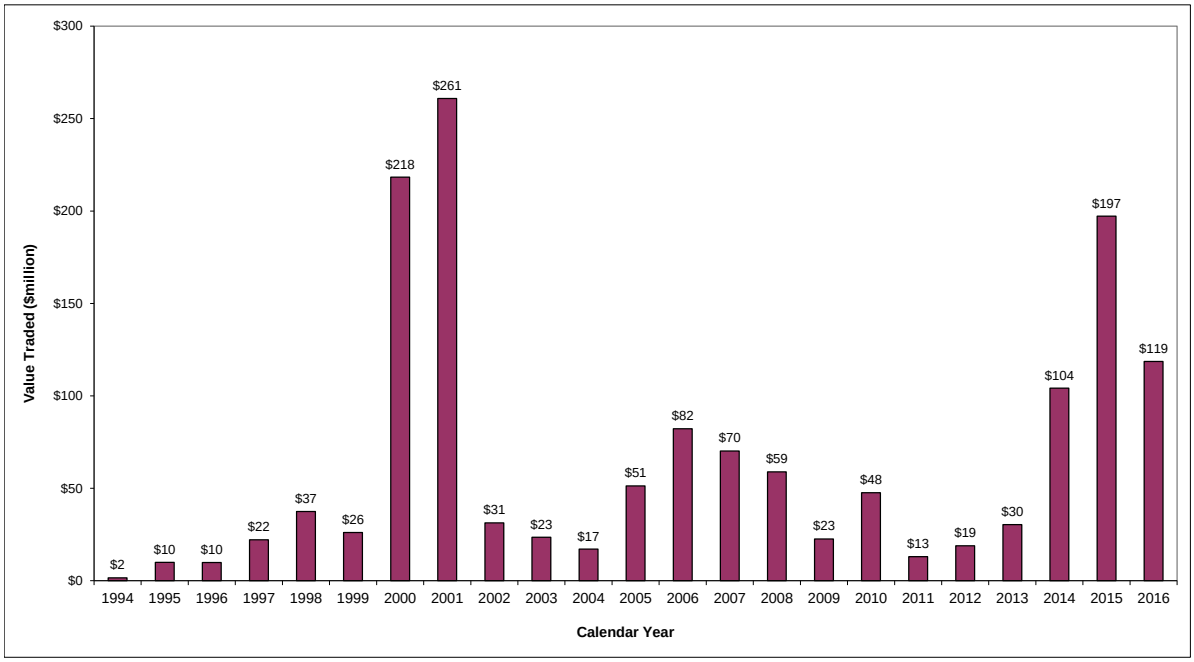
RTC Trading Activity Excluding Swaps

Overall Trading Activity

RTC trades include discrete-year and IYB RTCs traded with prices, discrete-year and IYB RTC transfers with zero price, and discrete-year and IYB RTC swap trades. The RTC market activity in calendar year 2016 was slightly lower (decreased by seven percent) when compared to the market activity in calendar year 2015 in terms of the number of trades. The calendar year 2016 trading activity—329 total registered trades (305 NOx trades and 24 SOx trades)—was slightly lower than the number of trades in calendar year 2015 (356 total registered trades; 335 NOx trades and 21 SOx trades).

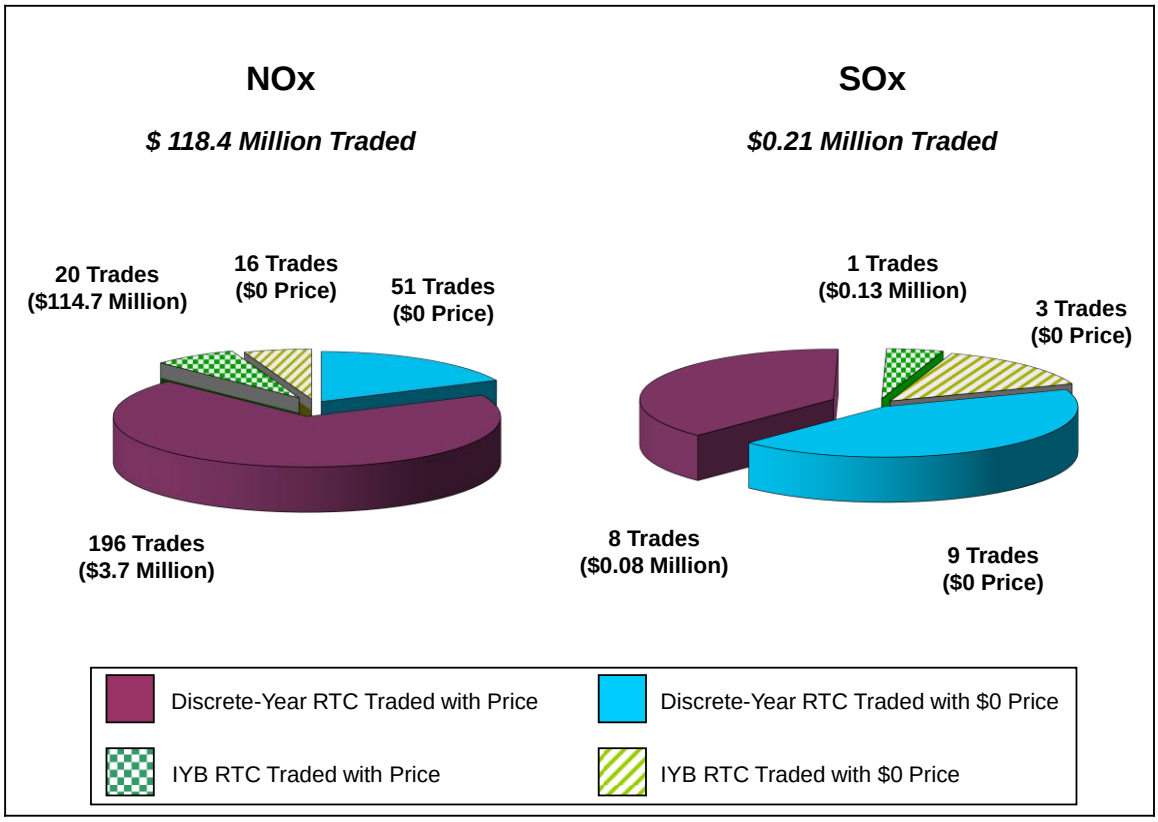
In comparison to calendar year 2015, the value traded in calendar year 2016 was substantially lower (decreased by 40%). Excluding swap trades, a total value of $118.6 million was traded in calendar year 2016 ($118.4 million for NOx and $0.21 million for SOx)—substantially lower than the total value of $197.1 million traded in calendar year 2015 ($193.1 million for NOx and $4.02 million for SOx). Figure 2-3 illustrates the annual value of RTCs traded in RECLAIM since the inception of the program.

Figure 2-3
Annual Trading Values for NOx and SOx (Excluding Swaps)



The total volume traded (excluding swap trades) in calendar year 2016 was 3,795 tons, which is 31% less than the 5,533 tons traded in calendar year 2015. With respect to volume traded (also excluding swap trades), the 2,790 tons of discrete-year RTCs traded in calendar year 2016 were substantially lower than the 3,891 tons of discrete-year RTCs traded in calendar year 2015. In calendar year 2016, there were 1,449 tons of discrete-year NOx RTCs and 134 tons of discrete-year SOx traded with price and 724 tons of discrete-year NOx and 483 tons of discrete-year SOx traded without price. In addition, the 1,005 tons of IYB RTCs traded in calendar year 2016 were also much lower than the 1,642 tons of IYB RTCs traded in 2015. There were 302 tons of IYB NOx and 2.5 tons of IYB SOx traded with price and 311 tons of IYB NOx traded with zero price and 390 tons of IYB SOx traded with zero price. Figure 2-4 summarizes overall trading activity (excluding swaps) in calendar year 2016 by pollutant. Additional information on the discrete-year and IYB trading activities, value, and volume are discussed later in this chapter.

Figure 2-4
Calendar Year 2016 Overall Trading Activity (Excluding Swaps)



There were 79 trades with zero price in calendar year 2016. 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 2016, the majority of trades with zero price were transfers between facilities under common ownership and facilities that underwent a change of operator.

Discrete-Year RTC Trading Activity

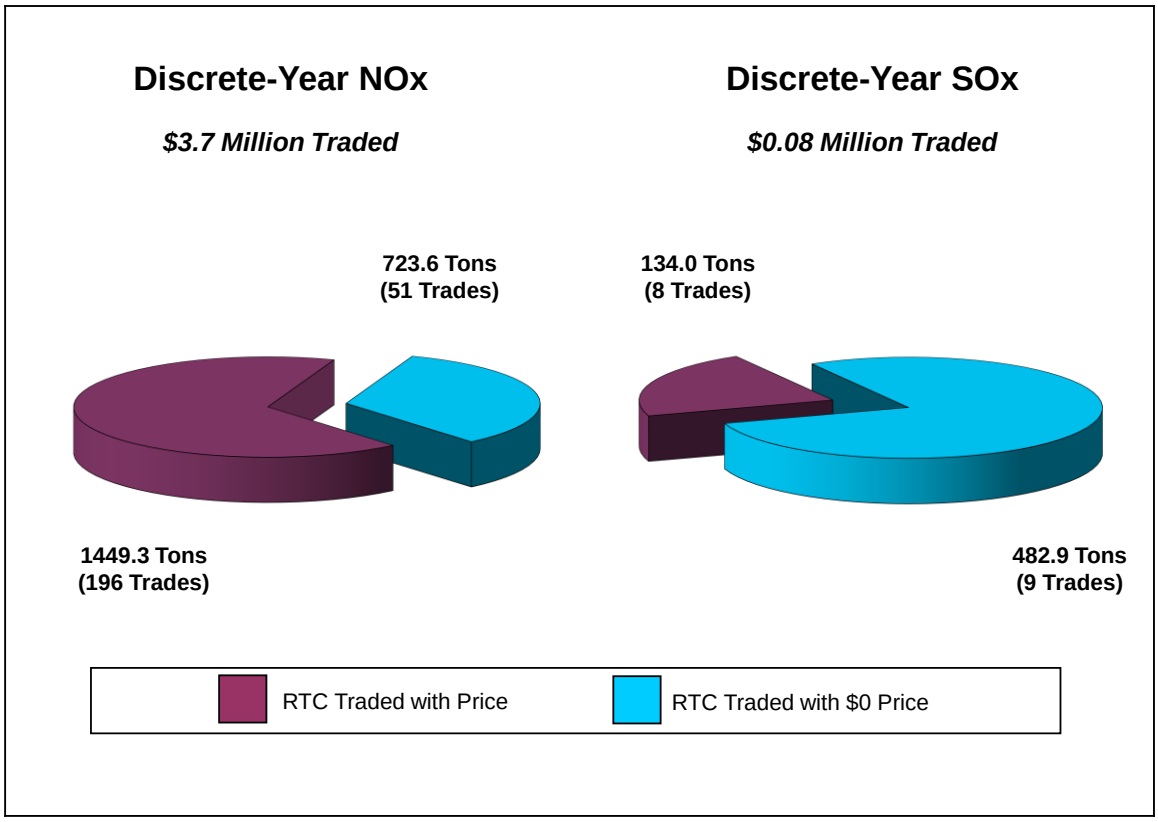
In calendar year 2016, there were a total of 247 discrete-year NOx RTC trades (196 trades with price and 51 trades with zero price) and 17 discrete-year SOx RTC trades (eight trades with price and nine trades with zero price), excluding swap trades. The trading of discrete-year NOx RTCs included RTCs for Compliance Years 2015 through 2017. The trading of discrete-year SOx RTCs included RTCs for Compliance Years 2015 and 2016.

Total discrete-year RTC trading values decreased in calendar year 2016. The 196 NOx trades with price totaled $3.7 million in value, down from $5.7 million in calendar year 2015. However, the eight discrete-year SOx trades with price

totaled $0.08 million in value, which is higher than the $0.02 million traded in calendar year 2015.

In calendar year 2016, the overall quantities of discrete-year NOx RTCs traded were 2,173 tons which is much lower than the 3,371 tons of NOx RTCs traded in calendar year 2015. The 617 tons of discrete-year SOx RTC traded in calendar year 2016 was higher than the 520 tons traded in calendar year 2015. There were 1,449 tons of discrete-year NOx traded with price in calendar year 2016, a significant decrease (40%) from the 2,396 tons of NOx in 2015. However, the 134 tons of discrete-year SOx RTCs traded in 2016 is much higher (185%) than the 47 tons of SOx RTCs traded in 2015. In addition, there were 724 tons of discrete-year NOx RTCs traded with zero price (decreased from 975 tons of NOx in 2015) and 483 tons of discrete-year SOx traded with zero price (a slight increase from 473 tons of SOx in 2015). Figure 2-5 illustrates the trading activity of discrete-year RTCs (excluding swaps) for calendar year 2016.

Figure 2-5
Calendar Year 2016 Trading Activity for Discrete-Year RTCs (Excluding Swaps)



IYB RTC Trading Activity

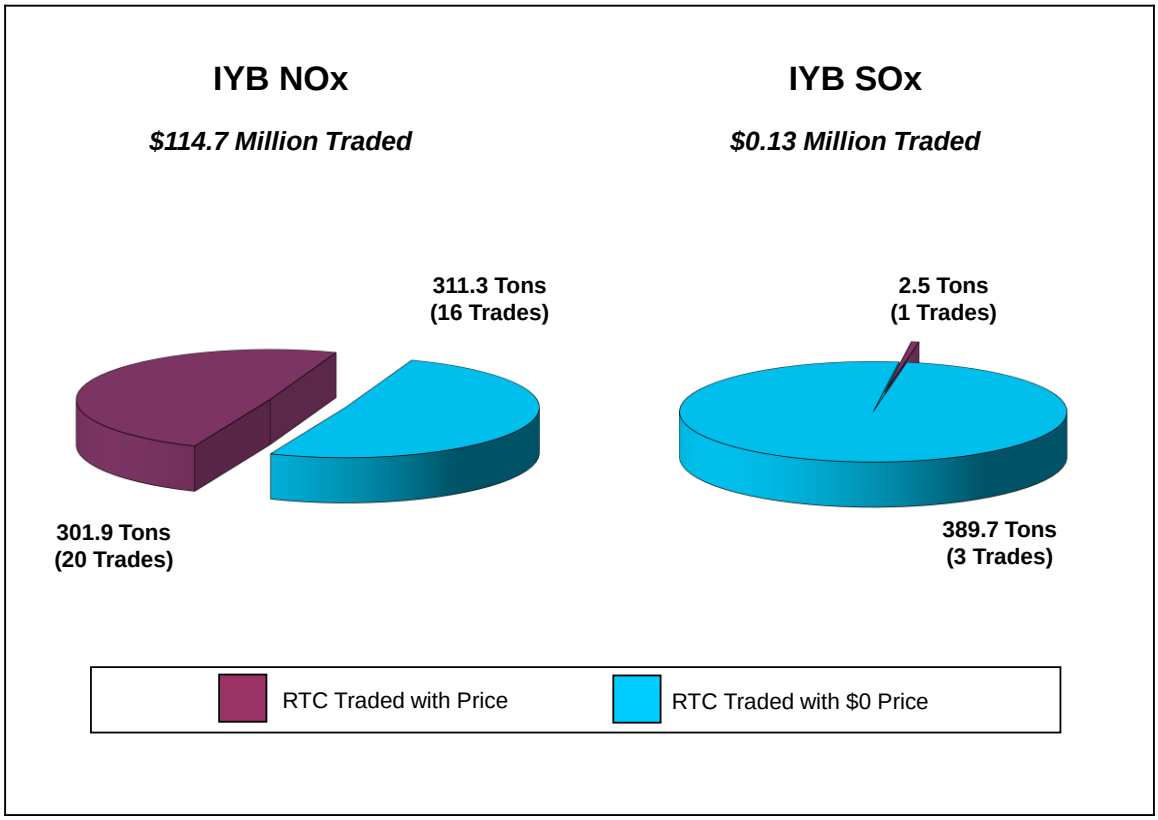
In calendar year 2016, there were 36 IYB NOx trades and four IYB SOx trades, excluding swaps. The IYB NOx trades included RTCs with Compliance Years 2015, 2016, 2017, and 2018 as start years, while the IYB SOx trades had RTCs with Compliance Years 2016and 2017 as start years. Of the 36 IYB NOx trades,

20 trades were with price and 16 trades were with zero price. Of the four IYB SOx trades, one was with price and three were with zero price.

The 20 IYB NOx trades with price totaling over $114.7 million in calendar year 2016 were much lower in value than the $187 million in 2015. The one IYB SOx RTC trades with price with total value of $0.13 million in calendar year 2016 was much lower than the value of $4.0 million traded in 2015.

The total quantity of 613 tons of IYB NOx traded in calendar year 2016 was significantly lower than the 1,234 tons traded in calendar year 2015. The quantity traded with price in calendar year 2016 was 302 tons, which was also significantly lower than the 939 tons traded with price in calendar year 2015. The total quantity of 392 tons of IYB SOx traded in calendar year 2016 was slightly lower than the 408 tons of IYB SOx traded in calendar year 2015. The quantity traded with price in calendar year 2016 was 2.5 tons, which was much lower than the 75 tons of IYB SOx traded with price in calendar year 2015. In calendar year 2016, there were also 311 tons of IYB NOx and 390 tons of IYB SOx traded without price. As described earlier, the majority of these transfers were between facilities under common ownership and facilities that had a change of operator. Figure 2-6 illustrates the calendar year 2016 IYB RTC trading activity excluding swap trades.

Figure 2-6
Calendar Year 2016 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-year 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-year NOx trades, discrete-year 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-Year NOx RTC Trades (Excluding Swaps)

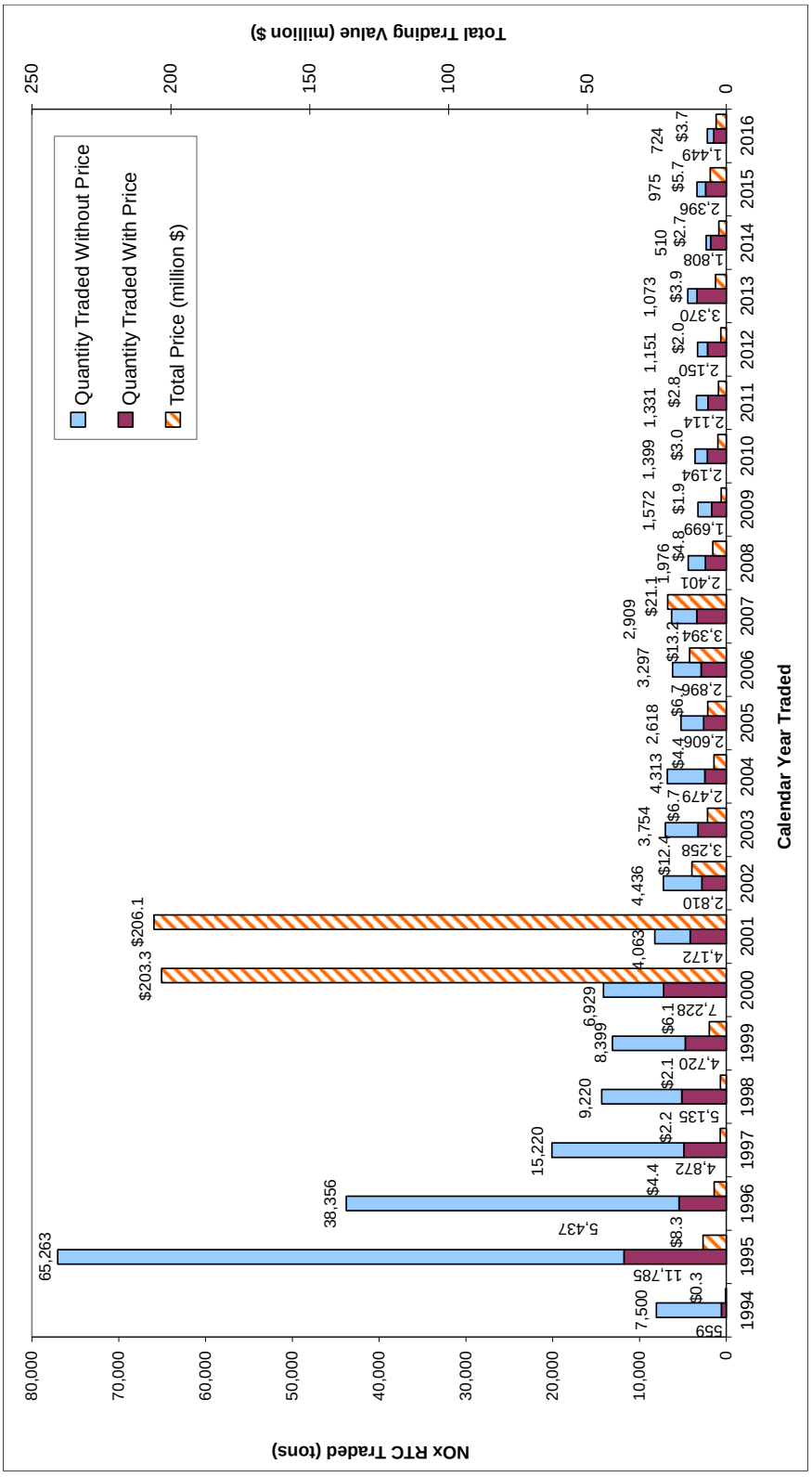


Figure 2-8
Discrete-Year SOx RTC Trades (Excluding Swaps)

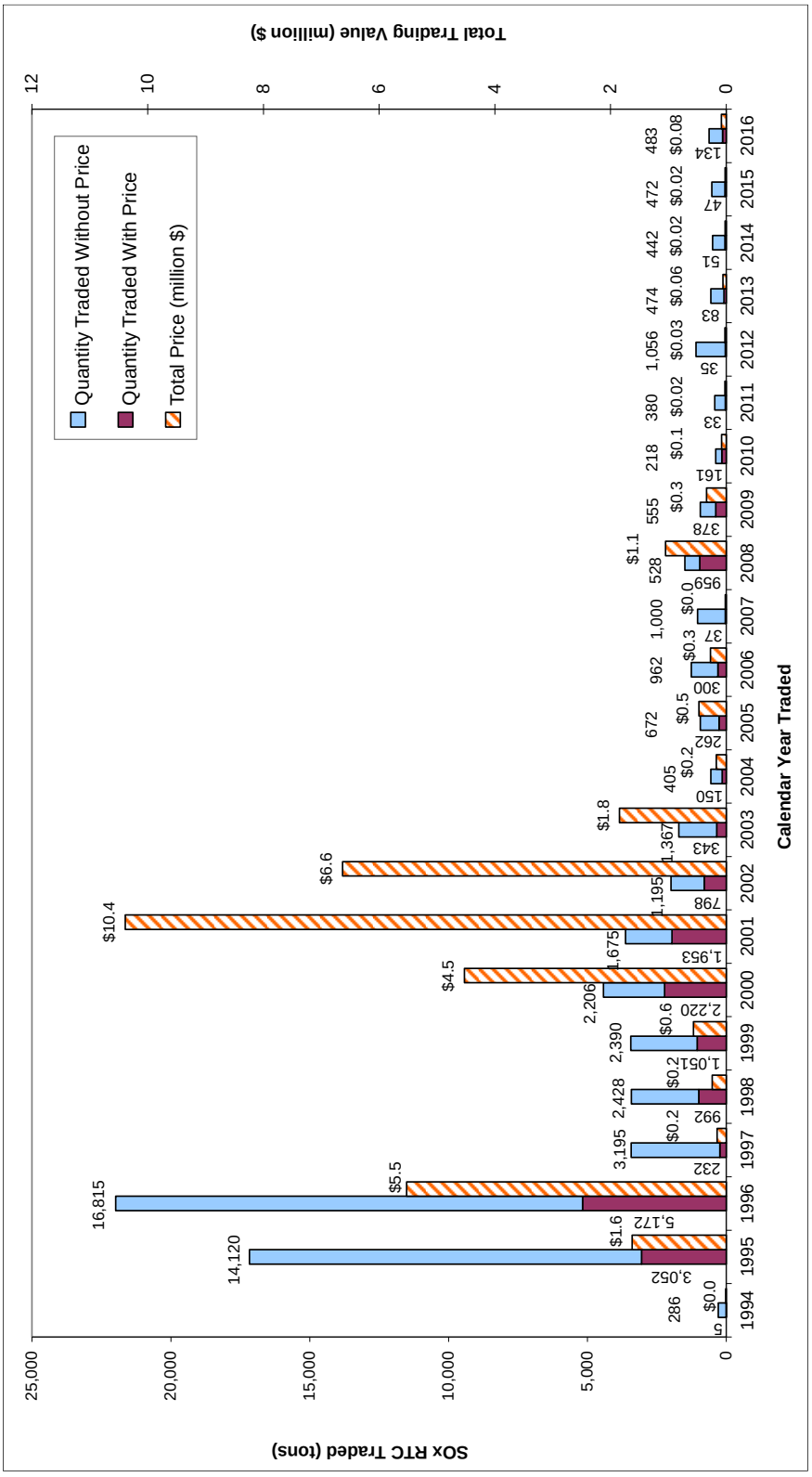


Figure 2-9
IYB NOx RTC Trades (Excluding Swaps)

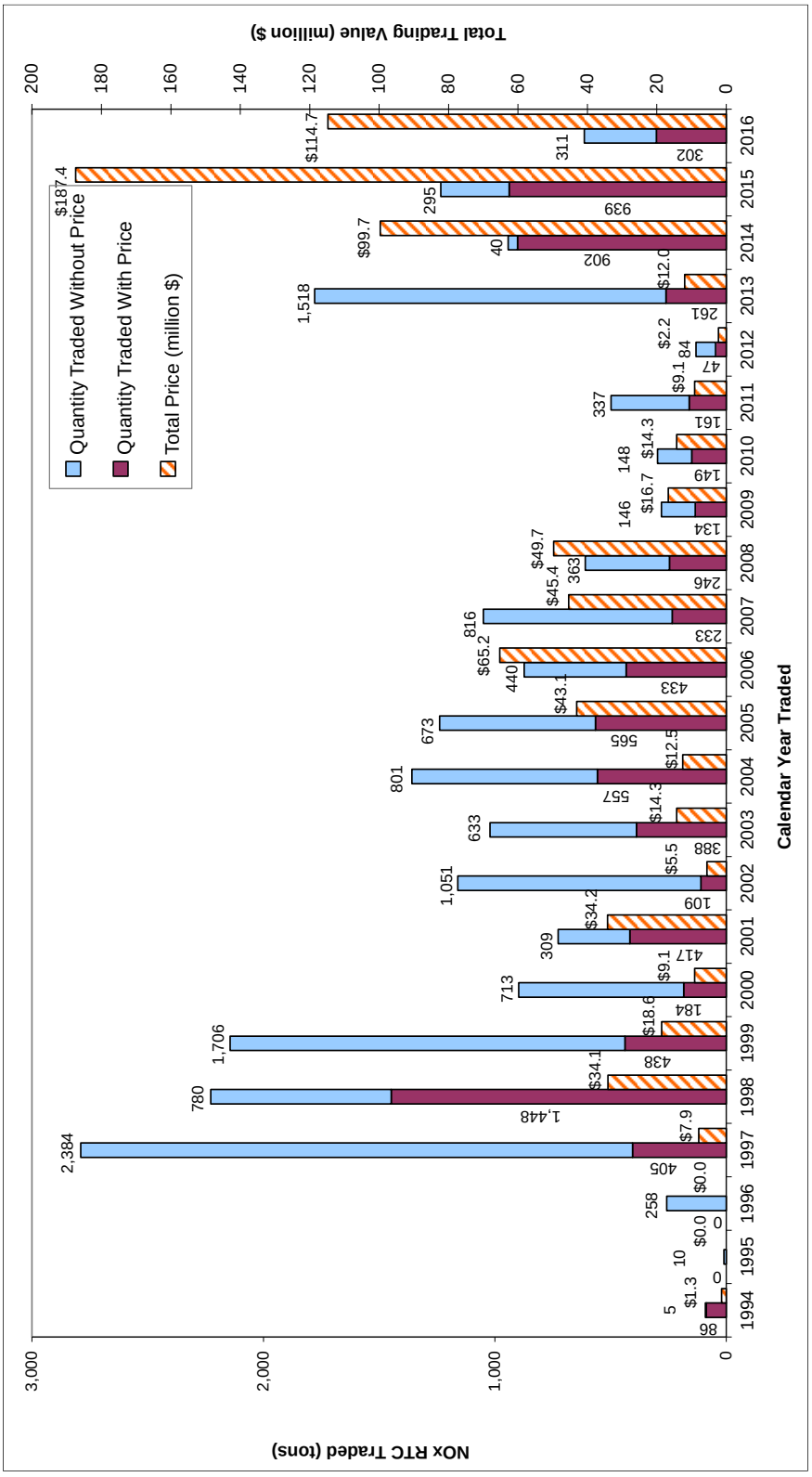
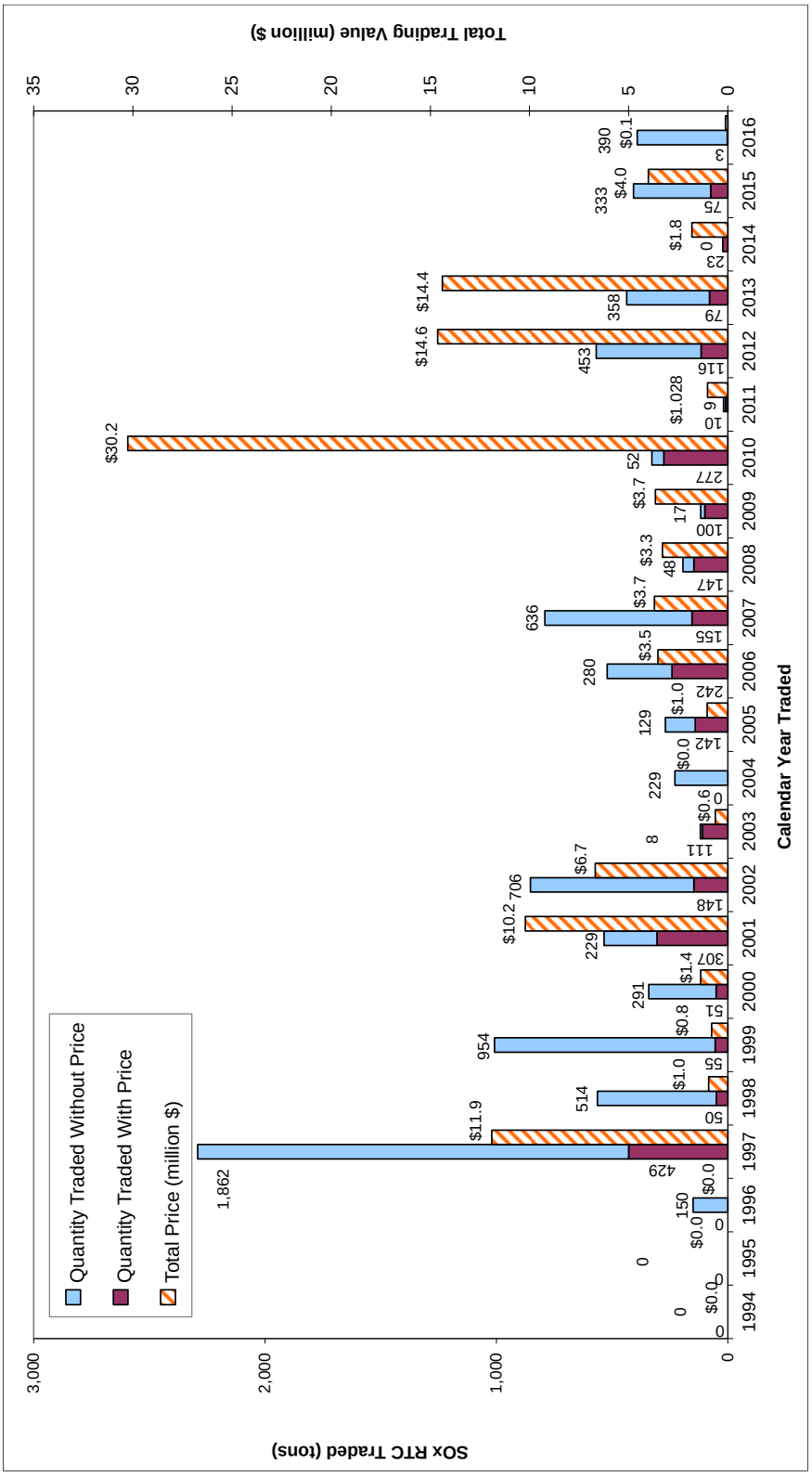


Figure 2-10
IYB SOx RTC Trades (Excluding Swaps)



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. In calendar year 2016, there is set of four trades between a RECLAIM facility and its wholly-owned subsidiary that were also classified as swap trades (see detailed discussion later in this chapter). As a result, over $5.8 million in total value was reported from RTCs that were swapped in calendar year 2016, of which two trades involved swapping IYB NOx RTCs for IYB SOx RTCs and were collectively valued at a total of $0.36 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 trades with large values (*e.g.,* 2009) the inclusion of swap trades in the average trade price calculations would have resulted in calculated annual average prices dominated by swap trades, 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 2016 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-Year 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
2015	$6.77	31.0	317.0	15	15
2016	$2.18	1.8	622.8	22	22

* 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-Year 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
2015	$0	0.0	0	0	0
2016	$3.68	39.6	44.2	3	3

* 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 (Excluding Swaps)

As staff was analyzing RTC trade prices, one set of trades stood out in terms of the reported prices. The set included four trades–one each for the transfer of discrete-year NOx RTCs, discrete-year SOx RTCs, IYB NOx RTCs and IYB SOx RTCs. The trades were submitted at the same time and were for the internal transfer of RTCs from one RECLAIM facility to its wholly-owned subsidiary, an apparent holding company for investment trades and not a RECLAIM facility. First, these trades of RTCs were odd in that the same subsidiary had previously transferred a majority of these same RTC's to its parent RECLAIM facility at no cost. That parent RECLAIM facility had discontinued its cement manufacturing operations and, therefore, did not need RTC's for that operation.

Second, the transactions were handled in an unusual fashion. After a shave is adopted (in this case, the December 2015 shave), a facility's pre-shave IYB RTCs become post-shave, a set of lesser IYB RTCs accompanied by discrete-year RTCs resulting from the shave. In trading post-shave RTCs, a facility normally sells its lesser IYB RTCs along with the resulting discrete-year RTCs in a lump trade, as District records show. In the internal trades, the discrete-year RTCs resulting from the shave were broken-out and sold separately to its wholly-owned investment subsidiary. Third, because the buyer is a wholly-owned subsidiary, the trades were not at arms-length. This makes the prices of these trades suspect, since they are not influenced by market prices. RTC prices set in this type of internal trade are analogous to "transfer prices" of goods and services exchanged among different entities under common ownership. It is important to distinguish transfer pricing from competitive market pricing, the latter of which corresponds to the market equilibrium where actual market supply satisfies the market demand. Due to compliance requirements set by financial regulations, transfer pricing usually reflects market prices to a reasonable degree (*i.e.*, the arm's length principle). However, as these regulations may not be applicable to RTC trades, it is less likely that the RTC prices in question were set in accordance with market prices.

Fourth, the traded prices for Compliance Years 2018 and after appear to be arbitrarily set. A comparison of the traded prices in the internal trade of discrete-year NOx RTCs to comparable RTCs of the same expirations shows that the prices for NOx RTCs in this internal trade are substantially higher with the only exception of Compliance Year 2015, as illustrated in Table 2-4 below. As seen in Table 2-4, starting with Compliance Year 2017, the internally traded prices are sometimes more than double the maximum market traded price of comparable RTCs. For Compliance Years 2020 and 2021, where the internally traded price exceeded the $15,000 per ton threshold specified under Rule 2015(b)(6), there were no comparable RTC's traded in the market for the calendar quarter prior to the trade submittal date of January 8, 2016. However, the sale prices for these two years were apparently based on the artificially high price of $10,000 per ton of Compliance Year 2017 RTCs. As shown in Table 2-4, the sale prices for the subsequent compliance years' RTCs, from 2018 through 2021, were arrived at by adding $3,000, $5,000, $7,000, and $8,000 per ton (or $1.50, $2.50, $3.50, and $4.00 per pound) respectively to the price for 2017 compliance year RTCs.

This also shows the arbitrariness of the sale prices set for the Compliance Years' 2020 and 2021 RTCs.

Finally, while discrete-year RTC trades for distant future compliance years may reflect to a certain degree the anticipated demand and supply in the RTC market, they can be also used as a risk management tool to hedge against potential RTC price volatilities, which may or may not materialize in future RTC market. If the trades were not internal, the increasing RTC price over the next compliance years could have reflected the buyer's assumption of an increasingly constricted supply of RTCs due to, *e.g.*, no facilities would install identified BARCT before 2021. However, in the case of internal trades, other factors related to the parent company's internal operations may have come into play, thus resulting in "transfer prices" that may not be reflective of the current and anticipated RTC market performances.

Table 2-4
Comparison of Prices for Discrete-Year NOx RTCs in Last Quarter of Calendar Year 2015 to Traded Prices of the Internal Trade

RTC Compliance Year	Maximum Price ($/ton)	Traded Price ($/ton)
2015	$3,700	$3,400
2016	$6,700	$7,000
2017	$4,200	$10,000
2018	$6,200	$13,000*
2019	$8,200	$15,000*
2020	No Trades	$17,000*
2021	No Trades	$18,000*

* There were no other trades of these compliance years' RTCs in 2016.

Based on the above analysis, it can be concluded that the internally traded prices for the discrete-year RTCs are not reflective of the market as intended under Rule 2015 (b)(6) because:

1. One single trade does not necessarily establish a market price. That single trade included a transfer of discrete-year credits from a RECLAIM facility to its wholly-owned subsidiary, which is an investment holding company, not a RECLAIM facility, and was not at arms-length and therefore not reflective of current and anticipated RTC market performance; and
2. The prices of almost all discrete-year RTC's sold in that single trade were about double the on-going market prices for comparable market-traded discrete-year RTCs, except for Compliance Years' 2020 and 2021 RTCs where there were no comparable trades.

Moreover, another reason for setting a market price threshold for review of the program is that market prices are a good indicator of the balance between supply and demand of a commodity such as RTCs. If there was an imbalance in the program, RTC prices would increase dramatically as in the case when California experienced an energy crisis and there was a surge in emissions from the energy sector. This is certainly not the case in Compliance Year 2015. Based on the

assessment of RTC supply in Compliance Year 2015 presented in Chapter 3 of this report, there are ample excess RTCs after accounting for all the emissions during the compliance year. In fact, emissions have remained relatively level since Compliance Year 2011. So, emission goals have been consistently met in the last five years and there is no basis to expect a shortage in RTC supply five years into the future, or Compliance Year 2020. Furthermore, there is no apparent increased demand for these RTCs since there is only one trade for these specific compliance years. In conclusion, since the prices reported for the transfer of RTCs in this set of four trades should not be regarded as market prices for the reasons cited above, these trades are classified as "swap trades", and are not included in the determination of annual average prices.

Discrete-Year RTC Prices

Table 2-5 lists the annual average prices for discrete-year NOx and SOx RTCs traded in 2016. The table shows that all annual average prices for discrete-year NOx and SOx RTCs were well below the $42,627 per ton of NOx and $30,691 per ton of SOx discrete-year RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f), and as well as, the $15,000 threshold specified under Rule 2015(b)(6) for reviews of the compliance aspects of the program.

Table 2-5
Annual Average Prices for Discrete-Year RTCs Traded In Calendar Year 2016

RTC Compliance Year	NOx Annual Average Price ($/ton)	SOx Annual Average Price ($/ton)
2015	$1,626	$540
2016	$2,932	$1,255
2017	$6,606	None Traded

For comparison purposes, Table 2-6 lists the annual average prices for discrete-year RTCs traded in calendar year 2016 (excluding swap trades) and also includes internal trades involving discrete-year RTCs that were not at arms-length and therefore do not reflect market prices (see discussions above).

Table 2-6
Annual Average Prices for Discrete-Year RTCs Traded In Calendar Year 2016 Including the Internal Trades

RTC Compliance Year	NOx Annual Average Price ($/ton)	SOx Annual Average Price ($/ton)
2015	$1,654.95	$594.31
2016	$2,984.47	$1,617.71
2017	$7,025.25	$3,000.00*
2018	$13,000.00*	$4,000.00*
2019	$15,000.00*	None Traded
2020	$17,000.00*	None Traded
2021	$18,000.00*	None Traded

* Only one trade was registered for RTCs valid for these compliance years' RTCs.

Rolling Average NOx and SOx RTCs Price Report

On December 4, 2015, the Governing Board amended Rule 2002 to change the 12-month rolling average price of NOx RTCs for all trades for the current compliance year, excluding RTC trades reported at no price and swap transactions, to a $22,500 per ton threshold. It also established a new $35,000 per ton threshold for the three-month rolling average price of current compliance year NOx RTCs and a $200,000 per ton "price-floor" threshold for the twelve-month rolling average price of IYB NOx RTCs that will become effective in 2019. The reporting of the three-month rolling average prices for current compliance year's NOx RTCs and the twelve-month rolling average prices of IYB NOx RTCs started on May 1, 2016.

The December 2015 amendments directed the Executive Officer to report to the Governing Board if (a) the cost of current compliance year NOx RTCs exceeds $22,500 per ton based on the twelve-month rolling average price, or (b) $35,000 per ton based on the three-month rolling average price. If either (a) or (b) above occurs, the Governing Board may convert the Non-tradable/Non-usable NOx RTCs valid for the period in which the RTC price(s) exceeded an applicable threshold to Tradable/Usable NOx RTCs pursuant to Rule 2002(f)(1)(H). Additionally, the Executive Officer's report to the Governing Board will include a "commitment and schedule to conduct a more rigorous control technology implementation, emission reduction, cost-effectiveness, market analysis, and socioeconomic impact assessment of the RECLAIM program." Furthermore, Rule 2002 (f)(1)(I) requires the Executive Officer to calculate the twelve-month rolling average price of IYB NOx RTCs. Beginning in Compliance Year 2019, the Executive Officer needs to report to the Governing Board when the price of IYB NOx RTCs falls below $200,000 per ton.

Starting January 2017, the Executive Officer is calculating and reporting the twelve-month rolling average prices for current compliance year SOx RTCs as required by the November 5, 2010 amendment to Rule 2002. The amendment established the $50,000 per ton of SOx RTC threshold. In the event that the SOx RTC price threshold is exceeded, the Governing Board will decide whether or not to convert any portion of the Non-tradable/Non-usable SOx RTCs to Tradable/Usable SOx RTCs.

Tables 2-7 through 2-10 lists the various rolling average prices[4] described above. The average NOx and SOx RTC prices have all remained well below the applicable reporting thresholds, and the IYB NOx price stayed above the $200,000 per ton "price-floor" threshold.

[4] Rolling average prices that were published since January 2017 included the internal trades. Since these trades are being classified as swap trades, the rolling average prices have been updated accordingly (see discussions above).

Table 2-7
Twelve-Month Rolling Average Prices of Compliance Year 2016 Discrete-Year NOx RTCs

Reporting Month	12-Month Period	Average Price ($/ton)
January 2016	January 2015 through December 2015	$2,833
February 2016	February 2015 through January 2016	$2,833
March 2016	March 2015 through February 2016	$3,032
April 2016	April 15 through March 2016	$3049
May 2016	May 2015 through April 2016	$3,078
June 2016	June 2015 through May 2016	$3,156
July 2016	July 2015 through June 2016	$3,174
August 2016	August 2015 through July 2016	$3,138
September 2016	September 2015 through August 2016	$3,191
October 2016	October 2015 through September 2016	$3,730
November 2016	November 2015 through October 2016	$3,546
December 2016	December 2015 through November 2016	$3,318
January 2017	January 2016 through December 2016	$2,932

Table 2-8
Three-Month Rolling Average Prices of Compliance Year 2016 Discrete-Year NOx RTCs

Reporting Month	12-Month Period	Average Price ($/ton)
May 2016	February 2016 through April 2016	$4,158
June 2016	March 2016 through May2016	$4,188
July 2016	April 2016 through June 2016	$4,304
August 2016	May 2016 through July 2016	$3,953
September 2016	June 2016 through August 2016	$3,747
October 2016	July 2016 through September 2016	$3,623
November 2016	August 2016 through October 2016	$2,778
December 2016	September 2016 through November 2016	$2,438
January 2017	October 2016 through December 2016	$2,741

Table 2-9
Twelve-Month Rolling Average Prices of Compliance Year 2016 IYB NOx RTCs

Reporting Month	12-Month Period	Average Price ($/ton)
May 2016	May 2015 through April 2016	$267,913
June 2016	June 2015 through May2016	$270,819
July 2016	July 2015 through June 2016	$365,654
August 2016	August 2015 through July 2016	$324,943
September 2016	September 2015 through August 2016	$324,449
October 2016	October 2015 through September 2016	$340,759
November 2016	November 2015 through October 2016	$376,628
December 2016	December 2015 through November 2016	$376,638
January 2017	January 2016 through December 2016	$380,057

Table 2-10
Twelve-Month Rolling Average Prices of Compliance Year 2016 Discrete-Year SOx RTCs

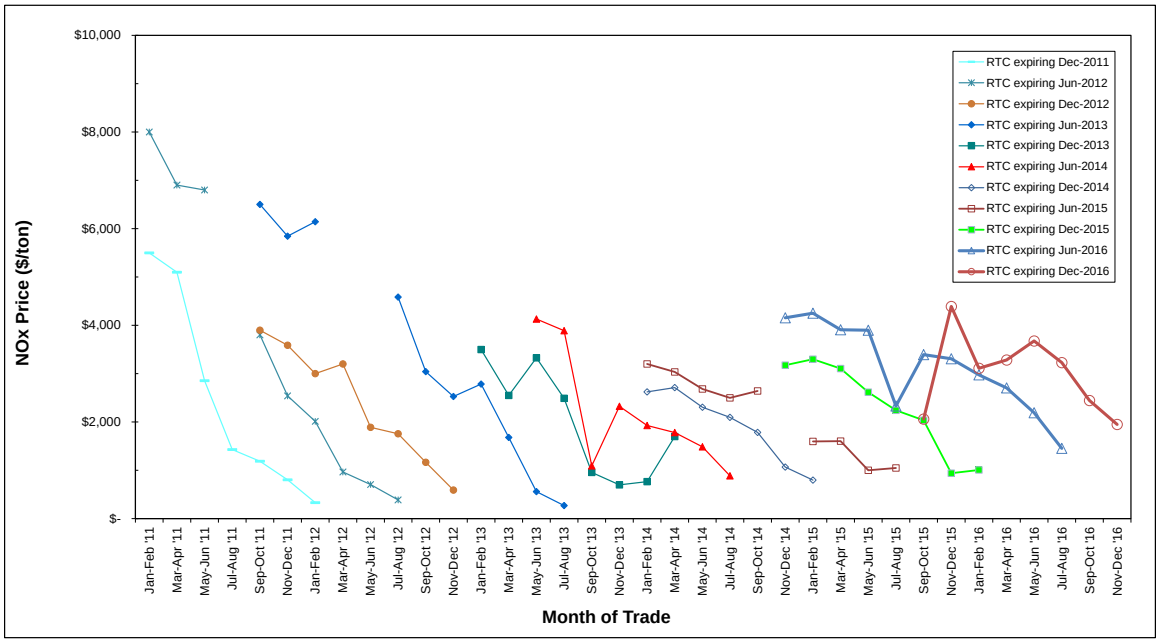
Reporting Month	12-Month Period	Average Price ($/ton)
January 2017	January 2016 through December 2016	$1,255

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, causing a shortage of NOx RTCs. Prices for NOx RTCs that expired in calendar year 2016 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 2-11 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 2016, there were only nine discrete-year SOx trades with price for Compliance Years' 2015 and 2016 RTCs. These prices were flat throughout the year.

Figure 2-11
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 2016 was $380,057 per ton, which is much higher than the annual average price of $199,685 per ton traded in calendar year 2015. This is expected since the IYB NOx RTCs traded in 2016 are those remaining RTCs after the application of the NOx reduction adopted by the Governing Board on December 4, 2015. The annual average price for IYB SOx RTCs traded in calendar year 2016 was $50,000 per ton, which is slightly lower than the $53,665 per ton traded in calendar year 2015. There was one IYB SOx trade with price totaling 2.5 tons in 2016, compared to the four IYB SOx trades and 75 tons traded in 2015. An investor purchased the IYB SOx traded with price. 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 2-11 and 2-12, respectively. In calendar year 2016, the annual average IYB RTC prices did not exceed the $639,399 per ton of NOx RTCs or the $460,367 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 2-11
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
2015	$187.4	938.5	47	$199,685
2016	$114.7	301.9	20	$380,057

* No information regarding swap trades was reported until May 9, 2001.

Table 2-12
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
2015	$4.0	74.8	4	$53,665
2016	$0.13	2.5	1	$50,000

* 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 trades, 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 actually be 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 were no reported trades involving the contingent right to buy or sell RTCs in calendar year 2016.

In addition to mitigating emissions at RECLAIM facilities, RTCs were also used by facilities to satisfy variance conditions. During calendar year 2016, three RECLAIM facilities retired a total of 0.7 tons of NOx RTCs for this purpose. These consisted of discrete-year RTCs for Compliance Years 2015 and 2016.

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 primary users of RTCs and they hold the majority of RTCs as allocations. 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. Brokers typically do not actually purchase RTCs but facilitate trades.

Investor Participation

In 2016 investors were actively involved in 137 of the 196 discrete-year NOx RTC trades with price, six of the eight discrete-year SOx RTC trades with price, and 16 of the 20 IYB NOx trades with price. An investor was also involved in the one IYB SOx trade with price.

Investors' involvement in discrete-year NOx and SOx trades registered with price in calendar year 2016 is illustrated in Figures 2-12 and 2-13. Figure 2-12 is based on total value of discrete-year NOx and SOx RTCs traded, and shows that investors were involved in 63% and 64%, respectively, of the discrete-year NOx and SOx trades reported by value. Figure 2-13 is based on volume of discrete-year RTCs traded with price and shows that investors were involved in 62% and 54% of the discrete-year NOx and SOx trades by volume, respectively. Figures 2-14 and 2-15 provide similar data for IYB NOx and SOx trades, and show that investors were involved in 25% of IYB NOx trades on a reported value basis, and 19% of IYB NOx trades on the basis of the volume traded with price. An investor was involved in the sole IYB SOx trade with price in calendar year 2016.

Figure 2-12
Calendar Year 2016 Investor-Involved Discrete-Year NOx and SOx Trades Based on Value Traded

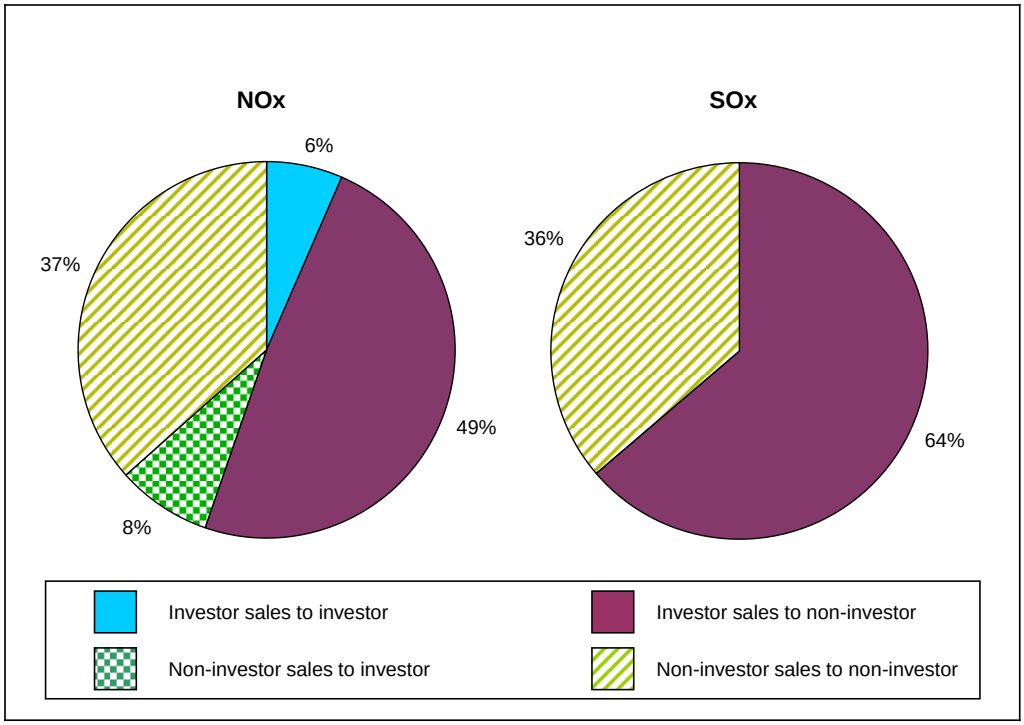


Figure 2-13
Calendar Year 2016 Investor-Involved Discrete-Year NOx and SOx Trades Based on Volume Traded with Price

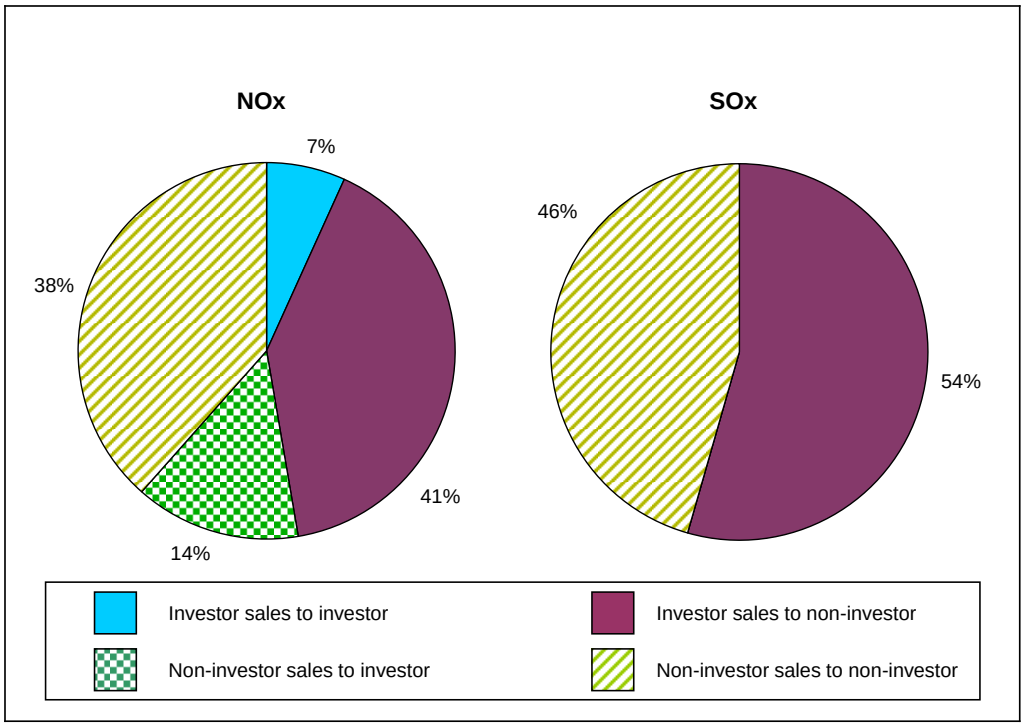


Figure 2-14
Calendar Year 2016 Investor-Involved IYB NOx and SOx Trades Based on Value Traded

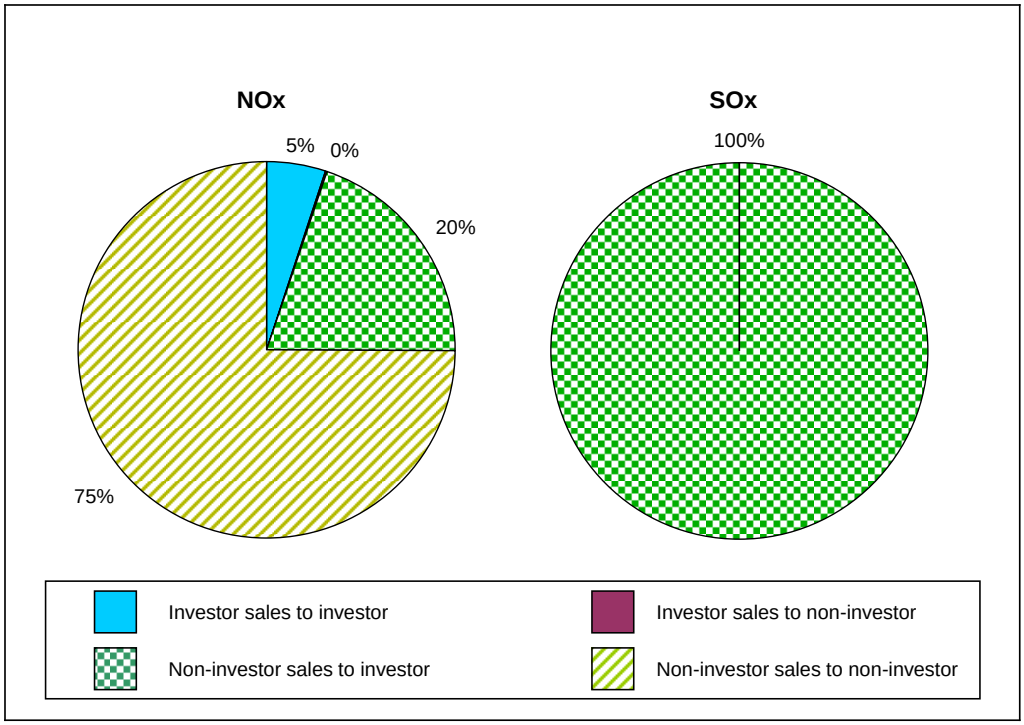
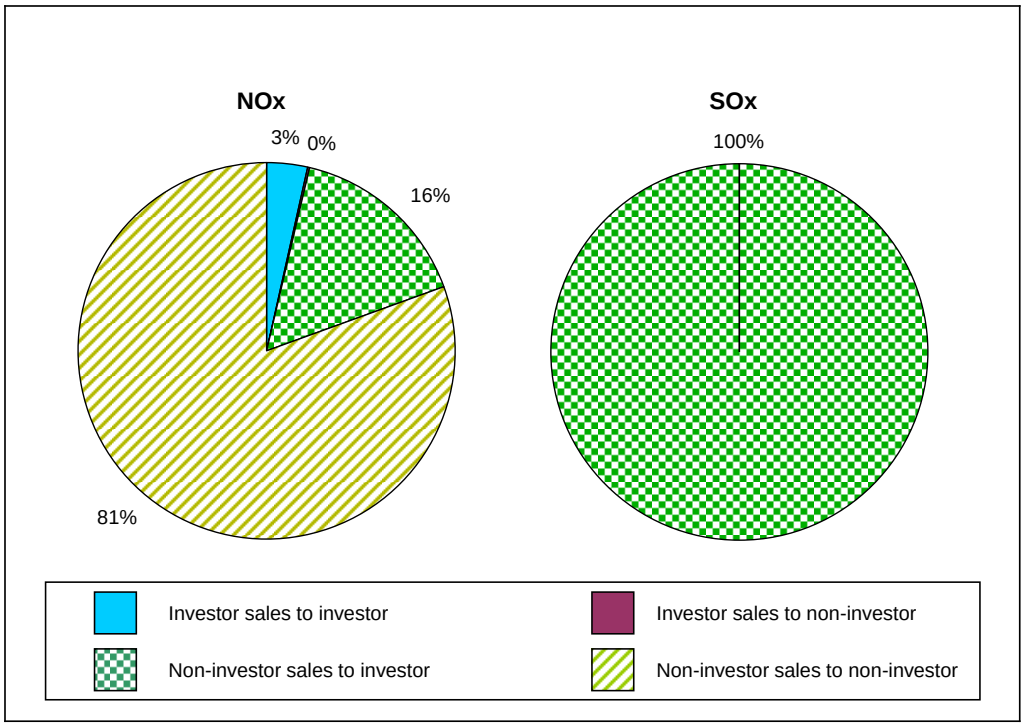


Figure 2-15
Calendar Year 2016 Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price



As of the end of calendar year 2016, investors' holding of IYB NOx RTCs had increased to 3.1% compared to 1.9% at the end of calendar year 2015. Mutual fund investors are no longer holders of IYB NOx RTCs, down from a high of 3.3% at the end of calendar year 2011 and 1.4% at the end of calendar year 2014. Investors' holding of IYB SOx RTCs increased to 5.0% at the end of calendar year 2016 from 3.3% at the end of calendar year 2015. 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 five RECLAIM facilities that shut down during Compliance Year 2015. These five facilities all participated in the NOx RECLAIM program and held a total of 48.3 tons of IYB NOx RTCs and the one facility also participating in the SOx RECLAIM program held a total of 44.0 tons of IYB SOx. Currently, these facilities hold a total of 2.4 tons of IYB NOx RTCs and 0.01 tons of IYB SOx RTCs. All IYB NOx and SOx RTCs sales from these shutdowns occurred prior to calendar year 2015.

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.

Generally, RECLAIM facilities hold back additional RTC's for each year as a compliance margin to ensure that they do not inadvertently find themselves exceeding their allocations (failing to reconcile by securing sufficient RTCs to cover their emissions) if their reported emissions increase as the result of any problems or errors discovered by SCAQMD staff during annual facility audits. Facilities have indicated to staff in the past that this compliance margin is approximately 10% of their emissions. For Compliance Year 2015, the total RECLAIM NOx emissions were 7,246 tons. If the future total NOx emissions increased to the Compliance Year 2007 level of 8,796 tons (the first year of the NOx allocation programmatic reduction adopted in January 2005), the NOx RTC surplus would be only 904 tons (9% of allocation), which is almost in line with the 10% compliance margin reportedly held by RECLAIM facilities.

To put investors' holdings in context, at the end of calendar year 2016 the aggregate investors' holdings are 3.1% of IYB NOx RTCs. While it can be argued that the holding of IYB NOx RTCs by investors as a group is small relative to the total supply of IYB NOx RTCs, and given the recent rule

amendment that reduced allocations by 45% to be achieved in future years, there is no clear basis to estimate the level of IYB RTCs available for sale by non-investors. IYB RTCs represent a 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. 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. SOx RECLAIM facilities had ample notice and have been able to keep aggregate SOx emissions below aggregate allocations without significant price increases in Compliance Years 2013, 2014, and 2015.

On December 4, 2015, the Governing Board amended Rule 2002 to implement BARCT by reducing the NOx RTC supply for Compliance Year 2016 and after, as further discussed in Chapter 3. Furthermore, on October 7, 2016, the Governing Board approved amendments to prevent facility shutdown RECLAIM Trading Credits (RTCs) from entering the market and potentially delaying the installation of pollution controls at NOx RECLAIM facilities in order to bring this aspect of RECLAIM more in line with non-RECLAIM New Source Review. The December 2015 and October 2016 amendments are expected to 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 these 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

Summary

For Compliance Year 2015, aggregate NOx emissions were below total allocations by 25% and aggregate SOx emissions were below total allocations by 26%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2015. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports. Therefore, based on audited emissions, RECLAIM achieved its targeted emission reductions for Compliance Year 2015. With respect to the Rule 2015 backstop provisions, Compliance Year 2015 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 and December 2015, the Board adopted amendments to Rule 2002 to further reduce aggregate RECLAIM NOx allocations through implementation of the latest BARCT. The 2005 amendments resulted in cumulative NOx allocation reductions of 22.5% (2,811 tons/year, or 7.7 tons/day) from all RECLAIM facilities by Compliance Year 2011, with the biggest single-year reduction of 11.7% in Compliance Year 2007. The 2015 amendments will reduce NOx allocations by 45.2% (4,380 tons/year, or 12.0 tons/day) by Compliance Year 2022. The reductions are phased-in from Compliance Year 2016 through Compliance Year 2022.

The Board also amended Rule 2002 in November 2010 to implement BARCT for SOx. Specifically, the November 2010 amendments called for certain facilities' RECLAIM SOx allocations to be adjusted to achieve a 48% (2,081 tons/year, or 5.7 tons/day) overall reduction, with the reductions phased-in from Compliance Year 2013 through Compliance Year 2019. About 1,460 tons/year, or 4.0 tons/day (approximately 70% of the scheduled reduction), of SOx allocations were reduced by Compliance Year 2014. The next increment of reduction will be in Compliance Year 2017 and the last increment will be in 2019.

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 RECLAIM emission 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 final 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 audited 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.

Since the last annual report, one facility's previous year audit was re-opened based on reassessment of the facility's records and all information available to the SCAQMD. The re-opened audit affected the facility's NOx emissions reported for Compliance Year 2014. Table 3-1 summarizes the change to the audited emissions for the impacted facility. This audit change caused a decrease of less than 0.002% in the overall audited RECLAIM NOx emissions for Compliance Year 2014.

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 in Audited NOx Emissions	% Change in RECLAIM NOx Emissions	Number of Facilities Involved
2014	13,584	13,079	-505	-3.7%	-0.003%	1

Incorporating the above, Table 3-2 and Figure 3-1 show aggregate audited NOx emissions for Compliance Years 1994 through 2015. 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% of the aggregate allocations. Specifically, Compliance Year 2015 NOx emissions were below total allocations by 25%. Aggregate annual NOx emissions have remained relatively level since Compliance Year 2011.

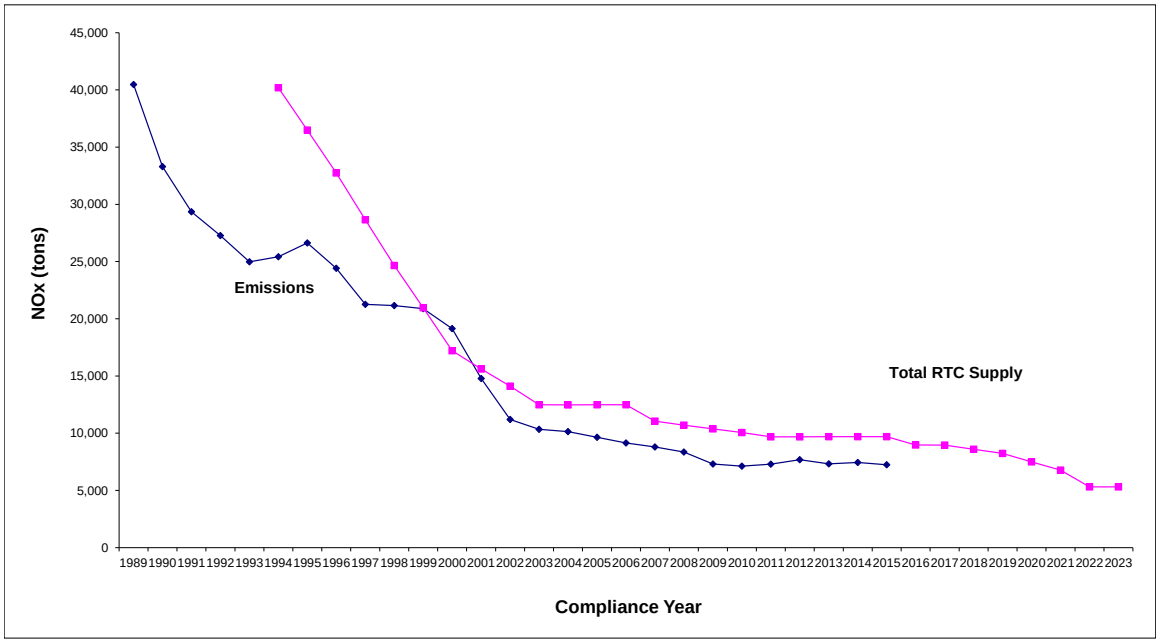
Table 3-2
Annual NOx Emissions for Compliance Years 1994 through 2015

Compliance Year	Audited Annual NOx Emissions[1] (tons)	Audited Annual NOx Emissions Change from 1994 (%)	Total NOx RTCs[2] (tons)	Unused NOx RTCs (tons)	Unused NOx RTCs (%)
1994	25,420	0%	40,187	14,767	37%
1995	26,632	4.8%	36,484	9,852	27%
1996	24,414	-4.0%	32,742	8,328	25%
1997	21,258	-16%	28,657	7,399	26%
1998	21,158	-17%	24,651	3,493	14%
1999	20,889	-18%	20,968	79	0.38%
2000	19,148	-25%	17,208	-1,940	-11%
2001	14,779	-42%	15,617	838	5.4%
2002	11,201	-56%	14,111	2,910	21%
2003	10,342	-59%	12,485	2,143	17%
2004	10,134	-60%	12,477	2,343	19%
2005	9,642	-62%	12,484	2,842	23%
2006	9,152	-64%	12,486	3,334	27%
2007	8,796	-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%
2014	7,447	-71%	9,699	2,252	23%
2015	7,246	-71%	9,700	2,454	25%

[1] The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.

[2] Total RTCs = Allocated RTCs + RTCs from ERC conversion.

Figure 3-1
NOx Emissions and Available RTCs



Similar to Table 3-2 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 2015, SOx emissions were below total allocations by 26%. The unused SOx RTCs from Compliance Year 2008 and on has remained in excess of 20%. 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 decreased by 80 tons (4%) in Compliance Year 2015 compared to SOx emissions in Compliance Year 2014.

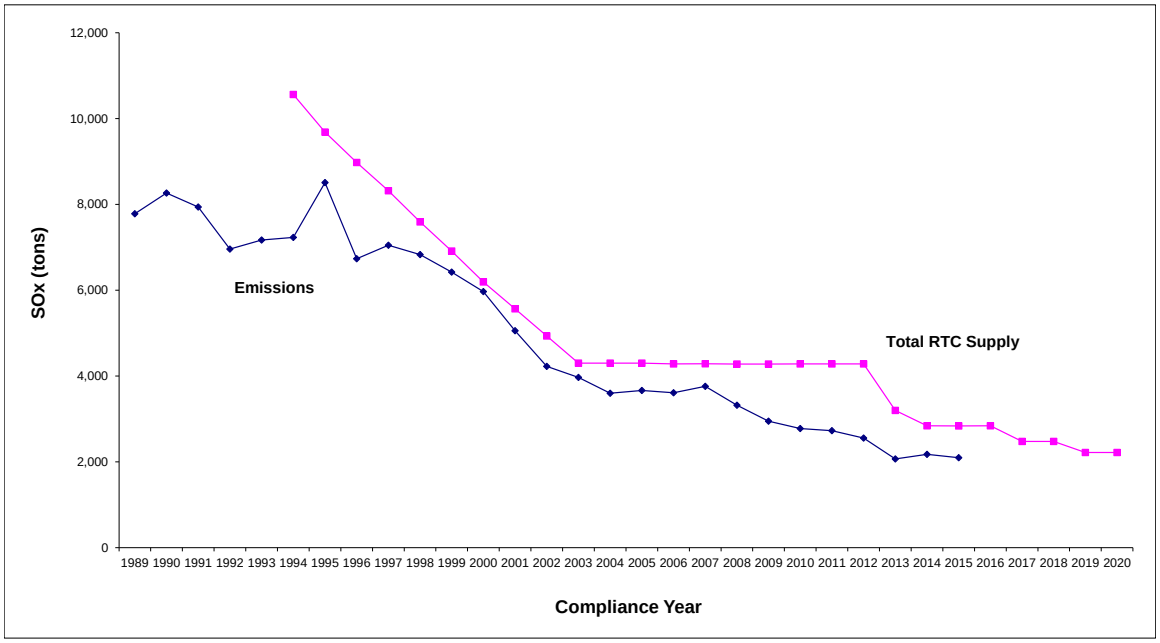
Table 3-3
Annual SOx Emissions for Compliance Years 1994 through 2015

Compliance Year	Audited Annual SOx Emissions[1] (tons)	Audited Annual SOx Emissions Change from 1994 (%)	Total SOx RTCs[2] (tons)	Unused SOx RTCs (tons)	Unused SOx RTCs (%)
1994	7,230	0%	10,559	3,329	32%
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%
2014	2,176	-70%	2,839	663	23%
2015	2,096	-71%	2,836	740	26%

[1] The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.

[2] Total RTCs = Allocated RTCs + RTCs from ERC conversion.

Figure 3-2
SOx Emissions and Available RTCs



Comparison to Command-and-Control Rules

RECLAIM subsumed a number of command-and-control rules[1] and sought to achieve reductions equivalent to these subsumed rules that continue to apply to non-RECLAIM facilities. 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.

The only rule subsumed by RECLAIM and amended during Compliance Year 2015, was Rule 1110.2 - Emissions from Gaseous- and Liquid-Fueled Engines. Amended on December 4, 2015, this rule extended the compliance deadline of January 1, 2016 for several biogas engine operators committed to installing control equipment because procurement and installation took longer than expected. The amendment also provided a compliance option for additional time with the payment of a compliance flexibility fee. Furthermore, U.S. EPA had raised concerns regarding the approvability of Rule 1110.2 into the State Implementation Plan because the existing breakdown provisions of the rule allowed unlimited emissions during reported breakdowns that were not subject to any enforcement action. This amendment addressed U.S.EPA's concerns on breakdowns and potential excess emissions without enforcement, by establishing a limit for exceedances due to breakdowns without enforcement action per calendar quarter. The amendment also removed existing rule language stating that certain breakdowns are not violations of the rule, and added U.S. EPA

[1] See Tables 1 and 2 of Rule 2001.

suggested language making clear that breakdowns may be subject to federal enforcement.

On June 3, 2016, Rule 1110.2, which was amended again to provide relief for one affected facility. This single facility, which operated two landfill gas-fired engines at the Prima Deshecha Landfill, was subject to a power purchase agreement (PPA) that expires on October 1, 2022, and could not economically meet the established compliance deadline of January 1, 2017. The amendments exempted the facility operator from the emission requirements of the rule, contingent upon the facility submitting a retirement plan for the permanent shutdown of all equipment subject to this rule at the expiration date of the PPA.

Neither the December 4, 2015 nor the June 3, 2016 amendments to Rule 1110.2 changed any category-wide equipment emissions limits. Rather, the limits for exceedances established in the December 4, 2015 amendment were for the express purpose of establishing excess emissions concentration thresholds for breakdowns (limiting no more than three per calendar quarter) to address U.S EPA's concern regarding unenforceable excess emissions from breakdowns. The June 3, 2016, amendment also did not impose a category-wide equipment emissions limit change. Rather, this amendment exempted a single non-RECLAIM facility from meeting its current command-and-control emission limit in exchange for the future permanent shutdown of all equipment subject to this rule at this facility. Since neither of these amendments to Rule 1110.2 affected category-wide emission limits and were administrative in nature, they did not result in any limitations requiring emission reductions on NOx or SOx sources at non-RECLAIM facilities. And, since Rule 2001 only exempts those provisions in identified rules applicable to NOx and SOx emissions at RECLAIM facilities, the recent amendments to Rule 1110.2 did not result in disproportionate impacts between RECLAIM and non-RECLAIM sources.

Other rules amended or adopted during Compliance Year 2015, but not subsumed by RECLAIM included Rules 1148.1 – Oil and Gas Production Wells, and Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers.

On September 4, 2015, the Governing Board amended Rule 1148.1. The amendment provided enforceable mechanisms to reduce odor nuisance potential from emissions associated with oil and gas production facility operations and also updated rule language to promote clarity, consistency and enforceability. The amendment required: 1) the use of odor mitigation best practices; 2) facilities located within 1,500 feet of a sensitive receptor to conduct and submit a specific cause analysis for any confirmed odor event; and 3) facilities with continuing odor issues to develop and implement an approved Odor Mitigation Plan.

Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers was also amended September 4, 2015. The purpose of this amendment was to establish requirements for owners or operators of oil and gas wells to notify the Executive Officer when conducting well drilling, well reworking, hydraulic fracturing, and other well production stimulation activities. The amendment also included reporting requirements for operators and chemical suppliers to report trade secret and non-trade secret chemicals used. The California Department of Conservation, through its Division of Oil, Gas, and Geothermal Resources (DOGGR) approved Well Stimulation Treatment

Regulations in response to the passage of Senate Bill 4 on December 30, 2014. Chemical reporting requirements for chemicals claimed as trade secret were different between the new DOGGR regulation and Rule 1148.2. Amended Rule 1148.2 included revisions to the chemical reporting requirements to be consistent with DOGGR's regulation.

In contrast to Rule 1110.2, Rules 1148.1 and 1148.2 were not subsumed under RECLAIM and contained no exemptions from their applicability for RECLAIM NOx or SOx sources. Since the requirements of these amended rules apply equally to both RECLAIM and non-RECLAIM facilities, there are no differential impacts in emissions when comparing the applicability of amended rule requirements to NOx and SOx sources under RECLAIM with NOx and SOx sources of non-RECLAIM facilities. Consequently, amendments to rules during Compliance Year 2015, both subsumed by RECLAIM and rules not subsumed by RECLAIM, did not result in any disparate impacts between NOx and SOx sources at RECLAIM and NOx and SOx sources at non-RECLAIM facilities.

Program Amendments

The Governing Board amended Regulation XX on December 4, 2015 to implement the 2012 AQMP Control Measure CMB-01 and adopted a programmatic 12 ton per day NOx RECLAIM trading credit (RTC) reduction (shave) from Compliance Years 2016 through 2022. The incremental shave schedule is 2 tons per day in 2016, 0 tons per day in 2017, 1 ton per day in 2018, 1 ton per day in 2019, 2 tons per day in 2020, 2 tons per day in 2021, and 4 tons per day in 2022.

The 2012 AQMP Control Measure CMB-01 sought to comply with California Health and Safety Code (H&SC) §40440 in regards to implementation of BARCT and to bring the Basin into attainment with the federal 24-hour PM2.5 standard by 2019 and the federal ozone ambient air quality standards by 2023 and 2031.

Among the proposed amendments considered in the December 4, 2015 Board package was a provision to require retirement of all NOx RTCs from complete facility closures or from equipment shutdowns that represent twenty - five percent or more of a facility's emissions for any quarter within the previous 2 compliance years. The objective of these shutdown provisions was to prevent NOx RTCs held by a shutdown facility from entering the market and potentially delaying the installation of pollution controls at other RECLAIM facilities. The Board did not adopt the proposed shutdown provisions and directed staff to return to the Board, after further analysis and discussion with RECLAIM stakeholders, with a proposal that would allow a closer alignment of shutdown credits in the RECLAIM program to requirements under command and control programs.

On October 7, 2016, the Governing Board adopted an amendment of Rule 2002 that included shutdown provisions that addressed the concerns of the Governing Board. The approved shutdown provisions apply only to facilities listed in Tables 7 and 8 of Rule 2002 that were issued initial NOx allocations by the SCAQMD. These facilities held over 90% of the total RTC supply. The revised shutdown provisions include a BARCT-based RTC discounting methodology for shutdown facilities that is more closely aligned to ERC discounting under command and control. When a subject facility shuts down, it will be required to surrender the amount of NOx RTCs equivalent to the difference between: (A) The average of

actual NOx emissions for the highest two of the last five years from equipment that is operated at a level greater than BARCT; and (B) The average NOx emissions from the same equipment that would have occurred if the equipment was operated at BARCT. The total RTC reduction cannot exceed the adjusted initial allocation issued to the shutdown facility by SCAQMD. If the calculated RTC reduction exceeds the facility's future year NOx RTC holdings, the owner or operator of the NOx RECLAIM shutdown facility is required to purchase and surrender a sufficient quantity of RTCs to fulfill the entire reduction requirement. Generally, the shortage was a result of previous sales of future RTCs, or deductions of future year RTCs due to exceedances. The amendments also incorporated exclusions from these provisions to allow facilities under the same ownership as of September 22, 2015 who have submitted a written declaration by November 7, 2016 identifying the facilities under the same ownership. Facilities under the declared same ownership will be allowed to use shutdown RTCs under certain conditions. In addition a provision was included to allow for planned non-operation for up to five years for facilities that met specific criteria.

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 or denied 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 2015 found that no facilities requested to exclude breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2015, no additional RTCs are required to offset breakdown emissions pursuant to Rule 2015(d)(3).

Table 3-4
Breakdown Emission Comparison for Compliance Year 2015

Emittant	Compliance Year 2015 Unused RTCs (tons)	Unmitigated Breakdown Emissions[1] (tons)	Remaining Compliance Year 2015 RTCs (tons)
NOx	2,454	0	2,454
SOx	740	0	740

[1] Data for unmitigated breakdown emissions (not counted against Allocation) as reported under APEP reports.

Impact of Changing Universe

As discussed in Chapter 1, one facility was included into and no facilities were excluded from the NOx universe, no facilities were included or excluded from the SOx universe, and five facilities (four NOx only facilities and one NOx and SOx facility) shut down in Compliance Year 2015. 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 pursuant to Rule 200(i)(1) may choose to enter the program even though they do not meet the inclusion criteria. Existing facilities that are neither categorically excluded nor exempt pursuant to Rule 2001(i)(2) 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 in 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 within the South Coast Air Basin. Finally, inclusions change the rules and requirements that apply to the affected facilities. In Compliance Year 2015, no existing facility elected to opt into the RECLAIM universe. However, one was included into the RECLAIM universe based on the Rule 2001 threshold of actual NOx and/or SOx emissions greater than or equal to four tons per year.

Facilities that received all SCAQMD Permits to Operate on or after October 15, 1993 are defined by Rule 2000 as new facilities. Except as described above for categorically excluded and exempt 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. For Compliance Year 2015, no new facilities elected to opt into the

RECLAIM universe or was included into the RECLAIM universe pursuant to the Rule 2001 threshold. 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 (any external offsets previously provided by the facility are converted to RTCs). 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.

The shutdown of a RECLAIM facility results in a reduction in actual emissions. Prior to the October 7, 2016 amendment of Rule 2002, shutdown facilities could retain its RTC holdings as an investment, transfer to another facility under common ownership, or trade on the market. Therefore, although the facility was no longer emitting, its RTCs could be used at another facility. Shutdown facilities had the opposite effect on the RTC market as did new facilities: the overall demand for RTCs was reduced while the supply remained constant. As reported in Chapter 1, five RECLAIM facilities (four NOx-only facilities and one NOx/ and SOx facility) shut down permanently in Compliance Year 2015.

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 effect of inclusions, in that the accounting of emissions is shifted from the RECLAIM universe of sources to the non-RECLAIM universe of sources.

Compliance Year 2015 NOx and SOx audited emissions and initial Compliance Year 2015 allocations for facilities that were shut down, excluded, or included into the program during Compliance Year 2015 are summarized in Tables 3-5 and 3-6.

Table 3-5
NOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2015 NOx Emissions (tons)	Initial Compliance Year 2015 NOx Allocations (tons)
Shutdown Facilities	2.0	66.4
Excluded Facilities	Not applicable	Not applicable
Included Facilities	7.9	0.0
RECLAIM Universe	7,246	9,700

Table 3-6
SOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2015 SOx Emissions (tons)	Initial Compliance Year 2015 SOx Allocations (tons)
Shutdown Facilities	0.0	44.1
Excluded Facilities	Not applicable	Not applicable
Included Facilities	Not applicable	Not applicable
RECLAIM Universe	2,096	2,836

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. Compliance Year 2015 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. Therefore, there is no need to initiate a program review due to emissions exceeding aggregate allocation in Compliance Year 2015.

CHAPTER 4
NEW SOURCE REVIEW ACTIVITY

Summary

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2015, a total of five NOx RECLAIM facilities had NSR NOx emission increases, and one SOx RECLAIM facility had an NSR SOx emission increase 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 2015, RECLAIM demonstrated federal equivalency with a programmatic NOx offset ratio of 39-to-1 and SOx offset ratio of 4,112-to-1 based on the compliance year's total unused allocations and total NSR emission increases for both NOx and SOx. 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 2015. 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), which is at least as stringent as federal Lowest Achievable Emission Rate (LAER). 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[1].

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.*, NOx and VOC). The federal offset requirement for major SO_2 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_2 standards, SOx is a precursor to PM2.5. The Basin is in Serious Non-attainment with 2006 Federal 24-hours standard and 2012 Federal annual standard for PM2.5. The applicable offset ratio for PM2.5 is at least 1-to-1, thus, the applicable offset ratio for SOx 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 SOx and state NNI requirements for both SOx and NOx. 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.

[1] Federal NSR applies to federal major sources (sources with the potential to emit at least 10 tons of NOx or 100 tons of SOx per year for the South Coast Air Basin) and state NNI requirements apply to all NOx sources and to SOx 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 NOx or SOx emissions, some RECLAIM facilities have actual emissions much less than 4 tons per year).

The same rule also requires all new RECLAIM facilities[2] 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 NOx on an aggregate basis. This annual program audit report assesses NSR permitting activities for Compliance Year 2015 to verify that programmatic compliance of RECLAIM with federal and state NSR requirements has been maintained.

NSR Activity

Evaluation of NSR data for Compliance Year 2015 shows that RECLAIM facilities were able to expand and modify their operations while complying with NSR requirements. During Compliance Year 2015, a total of five NOx RECLAIM facilities (all in Cycle 1) were issued permits to operate, which resulted in a total of 64.61 tons per year of NOx emission increases from starting operations of new or modified sources, and one SOx RECLAIM facility (Cycle 1) experienced 0.18 tons per year of SOx 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 (NOx: 2,454 tons, SOx: 740 tons; see Chapter 3) in the RECLAIM universe available 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 NOx and at least 1-to-1 for SOx) 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

[2] New facilities are facilities that received all District Permits to Construct on or after October 15, 1993.

a surrogate for RACT as the basis for calculating programmatic NOx and SOx offset ratios in the annual program audit report for Compliance Year 2005 and is continuing to do so for NOx in this report. This is a more conservative (*i.e.*, more stringent) approach than using actual RACT and is much more conservative than using aggregate Compliance Year 1994 allocations. The advantage of this approach is that, as long as the calculated NOx offset ratio is at least 1.2-to-1, it provides certainty that RECLAIM has complied with federal and state offset requirements without the need to know exactly what RACT is for RECLAIM facilities. However, if this very conservative approach should ever fail to demonstrate that the aggregate NOx offset ratio for any year is at least 1.2-to-1, that will not necessarily mean RECLAIM has not actually complied with the federally required 1.2-to-1 NOx offset ratio. Rather it will indicate that further analysis is required to accurately identify RACT so that the actual offset ratio can be calculated and a compliance determination made.

On November 3, 2016, EPA issued a proposed disapproval of the SCAQMD RACT demonstration submitted in July 2014 citing that the 2011 RECLAIM NOx emissions did not meet RACT requirements. This assessment was based on the staff report prepared for the 2015 NOx shave. The staff report showed sources operating in Compliance Year 2011 could have achieved lower emissions if all BARCT identified in 2005 were implemented for these sources. Regardless, whether or not the 2011 NOx emission goal should have been lower, staff believes that the November 2015 NOx shave and the rule amendment in October 2016 addressing equipment shutdown have adequately resolved any shortfall in RACT that may have existed in the 2005 NOx shave. Staff is in the process of discussing this with EPA in response to the proposed disapproval. Moreover, the offset ratio (39 to 1; see below) so far exceeds the required offset that there is still assurance that the 1.2 offset ratio is met.

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 five RECLAIM facilities resulted in 64.61 tons of NOx emission increase pursuant to Rule 2005(d). Additionally, as identified in Table 3-2 (Annual NOx Emissions for Compliance Years 1994 through 2015), 2,454 tons of Compliance Year 2015 NOx RTCs remained unused. Therefore, the Compliance Year 2015 NOx programmatic offset ratio calculated from this methodology is 39-to-1 as shown below:

$$\text{NOx Offset Ratio} = \left(1 + \frac{2{,}454 \text{ tons}}{64.61 \text{ tons}}\right)\text{-to-1}$$

$$= 39\text{-to-}1$$

Permits to operate issued to one RECLAIM facility resulted in 0.18 tons of SOx emission increase pursuant to Rule 2005(d). Additionally, as identified in Table 3-3 (Annual SOx Emissions for Compliance Years 1994 through 2015), 740 tons of Compliance Year 2015 SOx RTCs remained unused. Therefore, the Compliance Year 2015 SOx programmatic offset ratio calculated from this methodology is 4,112-to-1 as shown below:

$$\text{SOx Offset Ratio} = \left(1 + \frac{740 \text{ tons}}{0.18 \text{ tons}}\right)\text{-to-1}$$

$$= 4{,}112\text{-to-}1$$

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 1-to-1 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 740 tons of excess (unused) SOx RTCs for Compliance Year 2015. Since the offset ratio is 4,112-to-1, there is certainty that both the federally required SOx offset ratio and the California NNI requirement for SOx were satisfied.

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 2015 shows that RECLAIM is in compliance with both state NNI and federal NSR requirements. SCAQMD staff will continue to monitor NSR activity under RECLAIM in order to assure continued progress toward attainment of ambient air quality standards without hampering economic growth in the Basin.

Modeling Requirements

Rule 2004, as amended in May 2001, requires RECLAIM facilities with actual NOx or SOx emissions exceeding their initial allocation in Compliance Year 1994 by 40 tons per year or more to conduct modeling to analyze the potential impact of the increased emissions. The modeling analysis is required to be submitted within 90 days of the end of the compliance year. For Compliance Year 2015,

three RECLAIM facilities were subject to the 40 ton modeling requirement; two facilities for NOx emissions, and one for SOx emissions.

This modeling is performed with an EPA approved air dispersion model to assess the impact of a facilities NOx or SOx emission increase on compliance with all applicable state and federal ambient air quality standards (AAQS). Air dispersion modeling submitted by each facility is reviewed by staff and revised as necessary to comply with SCAQMD's air dispersion modeling procedures including use of appropriate meteorological data for the facility location. Per Rule 2004 (q)(3), the modeling submitted by a facility must include source parameters and emissions for every major source located at the facility. For comparison against applicable state and federal AAQS, the predicted modeling impacts due to a facilities NOx or SOx emission increases are added to the highest background NOx or SOx concentration measured at the nearest ambient air monitoring station during the previous three years. Modeling runs are performed with worst-case emissions data for averaging periods that coincide with the averaging period of each applicable AAQS (*e.g.*, 1-hr, 24-hr, annual).

The SOx facility, which had an initial SOx allocation in 1994 and exceed this initial allocation by more than 40 tons in Compliance Year 2015, submitted modeling that demonstrated that SOx emissions from their major sources during 2015 will not cause an exceedance of any state or federal SO_2 AAQS. One of the NOx facilities had an initial NOx allocation in 1994 and exceeded this initial allocation by more than 40 tons in Compliance Year 2015. This facility submitted modeling that demonstrated that NOx emissions from their major sources during 2015 will not cause an exceedance of any state or federal NO_2 AAQS. The other NOx facility, which had no initial allocation in Compliance Year 1994 and whose NOx emissions were above the 40 ton per year threshold, modeled NOx emissions at a much higher emission level prior to its recent commissioning. This initial modeling determined that the annual NOx emission increase would not cause an exceedance of state or federal NO_2 AAQS. Since the initial modeling was conducted at a much higher emission level than what the facility emitted in 2015, no additional modeling analysis is required (*i.e.*, the fact that modeling conducted during the permitting process demonstrated that emissions at the potential to emit level would not cause an exceedance of the state or federal AAQS for NO_2 provides certainty that the much lower actual emissions level would not cause such an exceedance).

CHAPTER 5
COMPLIANCE

Summary

*Of the 282 NOx RECLAIM facilities audited during Compliance Year 2015, a total of 265 facilities (94%) complied with their NOx allocations, and 32 of the 33 SOx facilities (97%) complied with their SOx allocations. Eighteen facilities exceeded their allocations (17 facilities exceeded their NOx allocations, and one facility exceeded its SOx allocation) during Compliance Year 2015. The 17 facilities that exceeded their NOx allocations had aggregate NOx emissions of 387.1 tons and did not have adequate allocations to offset 45.7 tons (or 11.8%) of their combined emissions. The one SOx facility that exceeded its SOx allocation had total SOx emissions of 2.7 tons and did not have adequate allocations to offset 0.2 tons (or 7.4%). The NOx and SOx exceedance amounts are relatively small compared to the overall NOx and SOx allocations for Compliance Year 2015 (0.47% of total NOx allocations and 0.01% of total SOx allocations). 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 2015 allocations. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2015 (*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 audits of each RECLAIM facility’s emission reports 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 2015, 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 emission and adjustment factors (*e.g.*, bias adjustment factors), failed to correct fuel usage to standard conditions, used emission calculation methodologies not

allowed under the rules, or used MDP inappropriately. 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 18 RECLAIM facilities failed to reconcile their emissions (17 NOx-only facilities and one NOx and SOx facility that only exceeded its SOx allocation). Thirteen of the 17 NOx-only facilities failed to secure sufficient RTCs during either the quarterly or annual reconciliation periods to cover their reported emissions. Four of these 13 NOx-only facilities with NOx exceedances based on reported emissions had additional exceedances because they under-reported their emissions and didn't hold sufficient RTCs to reconcile their audited emissions. The remaining four of the 17 facilities with NOx exceedances and the one NOx and SOx facility with a SOx exceedance had exceedances solely because they under-reported their emissions and didn't hold sufficient RTCs to reconcile their audited emissions. Reasons for under-reported NOx emissions include one or more of the following: failure to properly correct measured fuel flow to standard conditions defined as one atmosphere of pressure and a temperature of 60°F or 68°F provided that the same temperature is used throughout the facility, failure to use correct mass conversion factor when fuel flow is corrected to 60°F for process units and large sources with concentration limits, failure to submit emissions for one of the four compliance quarters, failure to use fuel flow commiserate with maximum rated equipment capacity when using timer-based fuel flow determination, failure to use correct emission factor(s), incorrect use of a unit conversion factor, and failure to apply missing data procedures during periods of invalid fuel flow measurement(s).

Overall, the Compliance Year 2015 allocation compliance rates for facilities are 94% (265 out of 282 facilities) for NOx RECLAIM and 97% (32 out of 33 facilities) for SOx RECLAIM. For purposes of comparison, the allocation compliance rates for Compliance Year 2014 were 96% and 97% for NOx and SOx RECLAIM facilities, respectively. The 17 facilities that had NOx emissions in excess of their individual NOx allocations had 387.1 tons of NOx emissions and did not have adequate RTCs to cover 45.7 of those tons (or 11.8%). The SOx facility that exceeded its SOx allocation and had total SOx emissions of 2.7 tons did not have adequate allocations to offset 0.2 tons (or 7.4%). The NOx and SOx exceedance amounts are relatively small compared to the overall allocations for Compliance Year 2015 (0.47% of aggregate NOx allocations and 0.01% of aggregate SOx allocations). Pursuant to Rule 2010(b)(1)(A), all 18 facilities had their respective NOx or SOx Allocation exceedances deducted from their annual emissions allocations for the compliance year subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2015 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 being overstated to reflect a "worst case"[1] 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[2].

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, 98 NOx facilities and 14 SOx facilities used MDP in reporting portions of their annual emissions during Compliance Year 2015. In terms of mass emissions, 6.9% of the total reported NOx emissions and 10.9% of the total reported SOx emissions in the APEP reports were calculated using MDP for Compliance Year 2015. 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).

[1] Based on uncontrolled emission factor at maximum rated capacity of the source and 24 hours per day.

[2] Based on averaged emissions during periods before and after the period for which data is not available.

Table 5-1
MDP Impact on Annual Emissions

Year	Percent of Reported Emissions Using Substitute Data*	
	NOx	SOx
1995	23.0% (65 / 6,070)	40.0% (12 / 3,403)
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)
2014	3.3% (97 / 247)	3.0% (13 / 66)
2015	6.9% (98 / 502)	10.9% (14 / 229)

* Numbers in parenthesis that are separated by a 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, 98 facilities reported NOx emissions using MDP in Compliance Year 2015. Even though the number of facilities is higher than in 1995, the percentage of emissions reported using MDP during Compliance Year 2015 is much lower than it was in 1995 (6.9% compared to 23%). Additionally, in terms of quantity, NOx emissions determined by the use of MDP in Compliance Year 2015 were about 8% of those in Compliance Year 1995 (502 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 7% of reported NOx annual emissions were calculated using MDP in Compliance Year 2015. 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 7% 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. For Compliance Year 2015, a significant portion of NOx MDP emissions data (74%) and majority of SOx MDP emissions data (96%) were reported by refineries, which tend to operate 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. Missing data emissions calculated using the lower tiers of MDP (*i.e.*, 1N Procedure or 30-day maximum value) for facilities such as refineries that have relatively constant operation near their maximum operation are generally reflective of actual emissions because peak values are close to average values for these operations.

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 tiered hierarchy of MRR requirements. A facility's equipment falls into an MRR category based on the kind of equipment it is and on the level of emissions produced or potentially produced by the equipment. RECLAIM divides all NOx sources into major sources, large sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. All SOx sources are divided into major sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. Table 5-2 shows the monitoring requirements applicable to each of these categories.

Table 5-2
Monitoring Requirements for RECLAIM Sources

Source Category	Major Sources (NOx and SOx)	Large Sources (NOx only)	Process Units and Rule 219 Equipment (NOx and SOx)
Monitoring Method	Continuous Emissions Monitoring System (CEMS) or Alternative CEMS (ACEMS)	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.

Alternative Continuous Emissions Monitoring Systems (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 ACEMS represent 19% and 61% of all permitted RECLAIM NOx and SOx sources during Compliance Year 2015, respectively, reported emissions for Compliance Year 2015 revealed that 78% of all RECLAIM NOx emissions and 99% 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 ±20% for pollutant concentration, ±15% for stack flow rate, and ±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 2015 and 2016 calendar years' passing rates for submitted 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. As noted in the footnotes for each table, the calendar year 2015 and 2016 passing rates are calculated from RATA data submitted before January 14, 2016 and January 5, 2017, respectively, and may exclude some RATA data from the fourth quarter of each year.

Table 5-3
Passing Rates Based on RATAs of Certified CEMS in 2015[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total[2] Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx[3]	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
373	100	93	100	13	100	42	100	379	100	373	100	80	100

[1] The calculation of passing rates includes all RATAs submitted by January 13, 2016. Ninety-nine percent of these RATAs were submitted electronically.

[2] Includes Cylinder Gas Audit (CGA) tests.

[3] Does not include SOx emissions calculated from total sulfur analyzers.

Table 5-4
Passing Rates Based on RATAs of Certified CEMS in 2016[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total[2] Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx[3]	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
366	100	101	100	15	100	50	100	361	100	366	99.7	93	100

[1] The calculation of passing includes all RATAs submitted by January 4, 2017. Ninety-nine percent of these RATAs were submitted electronically.

[2] Includes Cylinder Gas Audit (CGA) tests.

[3] Does not include SOx emissions calculated from total sulfur analyzers.

As indicated in Tables 5-3 and 5-4, the passing rates for NOx/SO_2 concentration, stack flow rate, and mass emissions were at or near 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.

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. All RATA results for calendar year 2016 were submitted via EDR.

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, which are collectively used to calculate stack flow rate. 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 rather than three-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 calculations 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, operators of 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 RECLAIM facilities and SCAQMD.

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 or observed by SCAQMD staff. 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 plans to initiate a Working Group during 2017. 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

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 2015 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 1,329 jobs, representing 1.21% of their total employment. One of the five RECLAIM facilities that shut down during Compliance Year 2015 cited RECLAIM as a factor contributing to the decision to shutdown. No other facilities reported any gain or loss of jobs due to RECLAIM.

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 2015 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 2015 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 2015.

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 2015 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 2015 APEP reports and follow-up contacts with facilities. A total of 122 facilities reported 9,756 job gains, while 131 facilities reported a total of 8,427 job losses.

Net job losses were reported in two of the three categories: sales of products (57), and manufacturing (1,642), whereas net job gains were reported in the remaining category: non-manufacturing (3,028). Table 6-1 shows a total net gain of 1,329 jobs, which represents a net jobs increase of 1.21% at RECLAIM facilities during Compliance Year 2015.

Table 6-1
Job Impacts at RECLAIM Facilities for Compliance Year 2015

Description	Manufacture	Sales of Products	Non-Manufacture	Total[1]
Initial Jobs	40,454	1,011	68,521	109,986
Overall Job Gain	2,250	68	7,438	9,756
Overall Job Loss	3,892	125	4,410	8,427
Final Jobs	38,812	954	71,549	111,315
Net Job Change	-1,642	-57	3,028	1,329
Percent (%) Job Change	-4.06%	-5.64%	4.42%	1.21%
Facilities Reporting Job Gains	87	26	70	122
Facilities Reporting Job Losses	103	28	80	131

[1] The total number of facilities reporting job gains or losses does not equal the sum of the number of facilities reporting job changes in each category (*i.e.*, the manufacture, sales of products, and non-manufacture categories) due to the fact that some facilities may report changes under more than one of these categories.

Data in Table 6-1 include five RECLAIM facilities that were reported to have shut down or ceased operations in Compliance Year 2015 as listed in Appendix C. One facility was demolished after its brand had been sold to a third party. Staff attempted to contact the owners, but were unable to obtain further clarification regarding the reason for shutdown. Two other facilities consolidated their operations into other company-owned RECLAIM facilities. The fourth facility cited more attractive utility of land and resources, cost of meeting air pollution regulations, including RECLAIM, Rule 1156 and the SCAQMD compliance burden, and an unfriendly business environment as the reasons for shutdown. The fifth facility sold all equipment and property to a third party. RECLAIM staff attempted to contact the parent company for a more descriptive reason for the shutdown, but received no response.

These shutdowns led to a total loss of 201 jobs (139 manufacturing jobs, 42 sales jobs, and 20 non-manufacturing jobs, according to the submitted APEP reports. Of the five shutdown facilities, one facility claimed 30 job lost to RECLAIM and its compliance burden (refer to Appendix E). No other RECLAIM facilities attributed job gains or losses to RECLAIM for Compliance Year 2015.

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 directly 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

Summary

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. Compliance Year 2015 NOx emissions decreased 2.7% relative to Compliance Year 2014, and Compliance Year 2015 SOx emissions were 3.7% less than the previous year. Quarterly calendar year 2015 NOx emissions fluctuated within 10% of the mean NOx emissions for the year. Quarterly calendar year 2015 SOx emissions fluctuated within seven 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 2016, 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 applicable, 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 website[1], and

[1] The quarterly emission maps can be found at: http://www.aqmd.gov/home/programs/business/about-reclaim/quarterly-emission-maps.

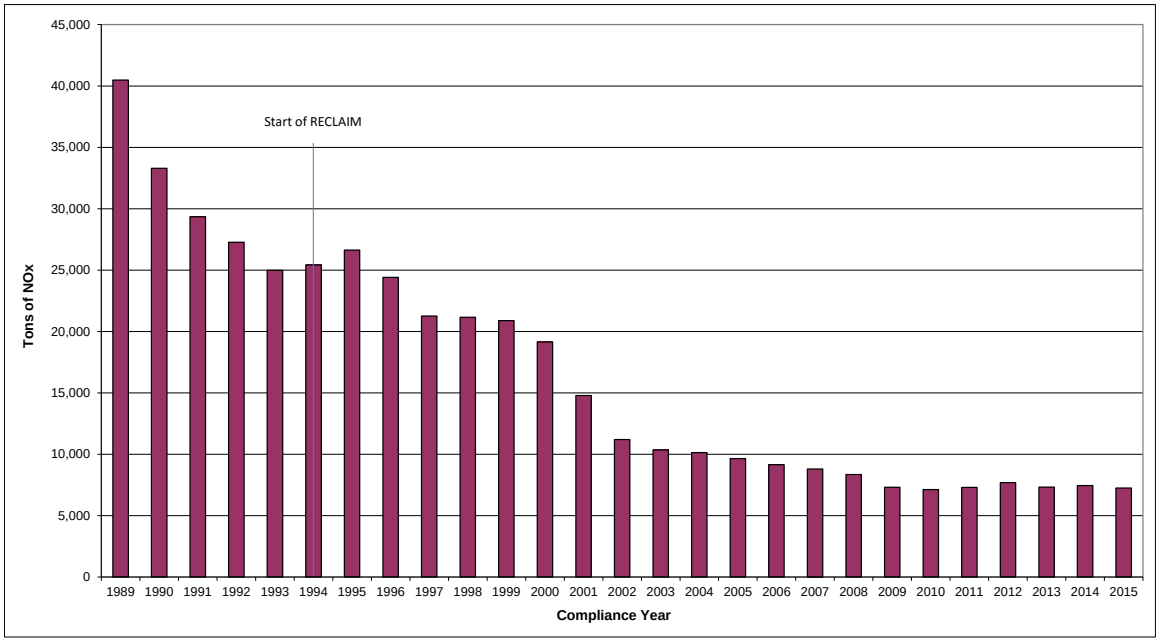
include all the quarterly emissions maps presented in previous annual program audit reports. This chapter addresses:

- Emission trends for RECLAIM facilities;
- Seasonal fluctuations in emissions;
- Per capita exposure to air pollution; and
- Toxics impacts.

Emission Trends for RECLAIM Sources

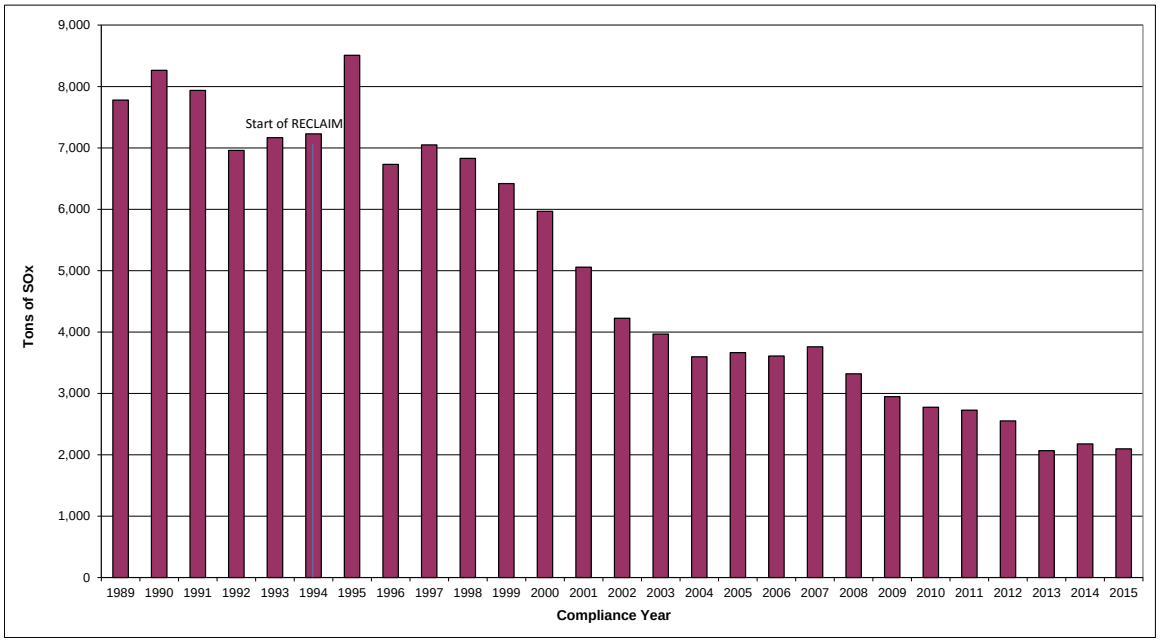
Concerns were expressed during program development that RECLAIM might cause sources to increase their aggregate emissions during the early years of the program due to perceived over-allocation of emissions. As depicted in Figures 7-1 and 7-2, which show NOx and SOx emissions from RECLAIM sources since 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 from Compliance Year 1995 through Compliance Year 2009, and the emissions from Compliance Year 2009 to Compliance Year 2015 have fluctuated within a narrow range (7,121 – 7,691 ton/yr, or < ± 4% of the mid-point). As shown in Table 3-2 and Figure 3-1, these emission levels are much lower than the programmatic goals. Since Compliance Year 1995, annual SOx emissions have also followed a general downward trend, except for slight increases in Compliance Years 1997, 2005, 2007, and 2014 compared to each respective previous compliance year.

The increase in NOx and SOx emissions from Compliance Year 1994 to 1995 can be attributed to the application of MDP at the onset of RECLAIM implementation. RECLAIM provides for emissions from each major source's first year in the program to be quantified using an emission factor and fuel throughput (interim reporting) while they certify their CEMS. However, at the beginning of the program (Compliance Year 1994), many facilities had difficulties certifying their CEMS within this time frame, and consequently reported their Compliance Year 1995 emissions using MDP. As discussed in Chapter 5, since CEMS for these major sources had no prior data, MDP required the application of the most conservative procedure to calculate substitute data. As a result, the application of MDP during this time period yielded substitute data that may have been much higher than the actual emissions. In addition, emissions after Compliance Year 1995 decreased steadily through 2000. Thus, RECLAIM facilities did not increase their actual 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 2015 RECLAIM emissions to the quarterly variation in emissions from the RECLAIM universe prior to the implementation of RECLAIM.
2. In the second part, staff analyzed quarterly audited emissions during calendar year 2015 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.[2]

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 2015 mean quarterly NOx emission level, which is the average of the aggregate audited emissions for each of the four quarters, and the 2015 audited quarterly emissions. Figure 7-4 compares the 2015 quarterly NOx emissions with the quarterly emissions from 2004 through 2014. During calendar year 2015, quarterly NOx emissions varied from six percent below the mean in

[2] 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.

the first quarter (January through March) to about ten percent above the mean in the third quarter (July through September). Figure 7-4 shows that the calendar year 2015 quarterly emissions profile is consistent with previous years under RECLAIM, with calendar year 2013 being the only notable exception. Figures 7-3 and 7-4, along with the qualitative analysis performed above, show that in calendar year 2015 there has not been a significant shift in NOx emissions from the winter months to the summer months.

Figure 7-3
Calendar Year 2015 NOx Quarterly Emissions

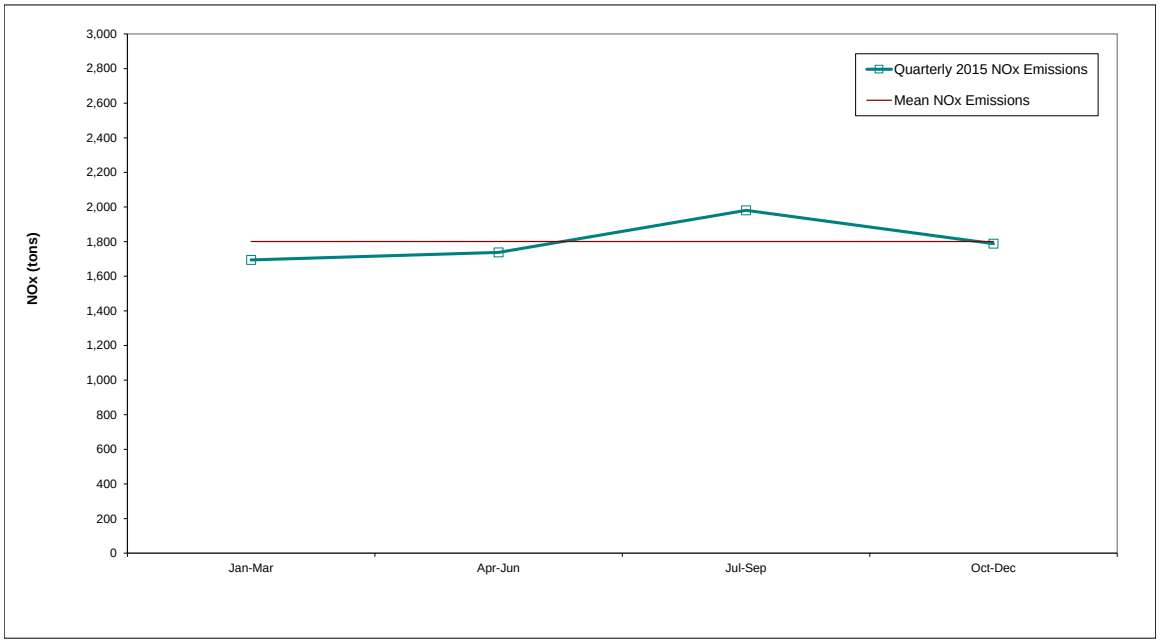
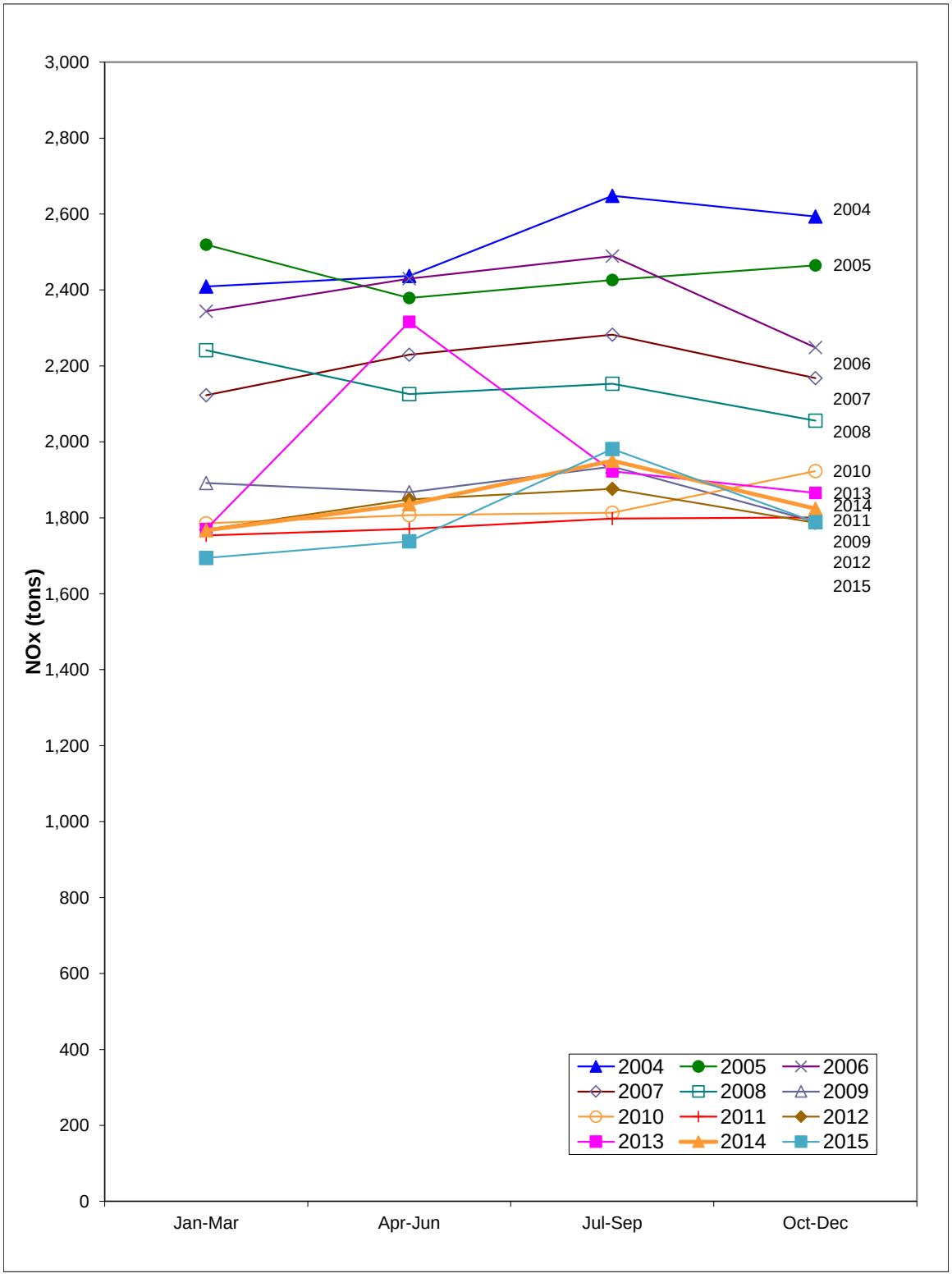


Figure 7-4
Quarterly NOx Emissions from Calendar Years 2004 through 2015



Similar to Figure 7-3 and 7-4 for NOx quarterly emissions, Figure 7-5 presents the 2015 mean quarterly SOx emissions and the 2015 audited quarterly emissions, while Figure 7-6 compares the 2015 quarterly SOx emissions with the quarterly emissions from 2004 through 2014. Figure 7-5 shows that quarterly SOx emissions during calendar year 2015 varied from about six percent above the mean in the fourth quarter (October to December) to seven percent below the mean in the first quarter (January to March). Figure 7-6 shows that the calendar year 2015 quarterly emissions profile is roughly consistent with previous years under RECLAIM. Both Figures 7-5 and 7-6, along with the qualitative analysis performed above, show that in calendar year 2015 there was not a significant shift in SOx emissions from the winter months to the summer months.

Figure 7-5
Calendar Year 2015 SOx Quarterly Emissions

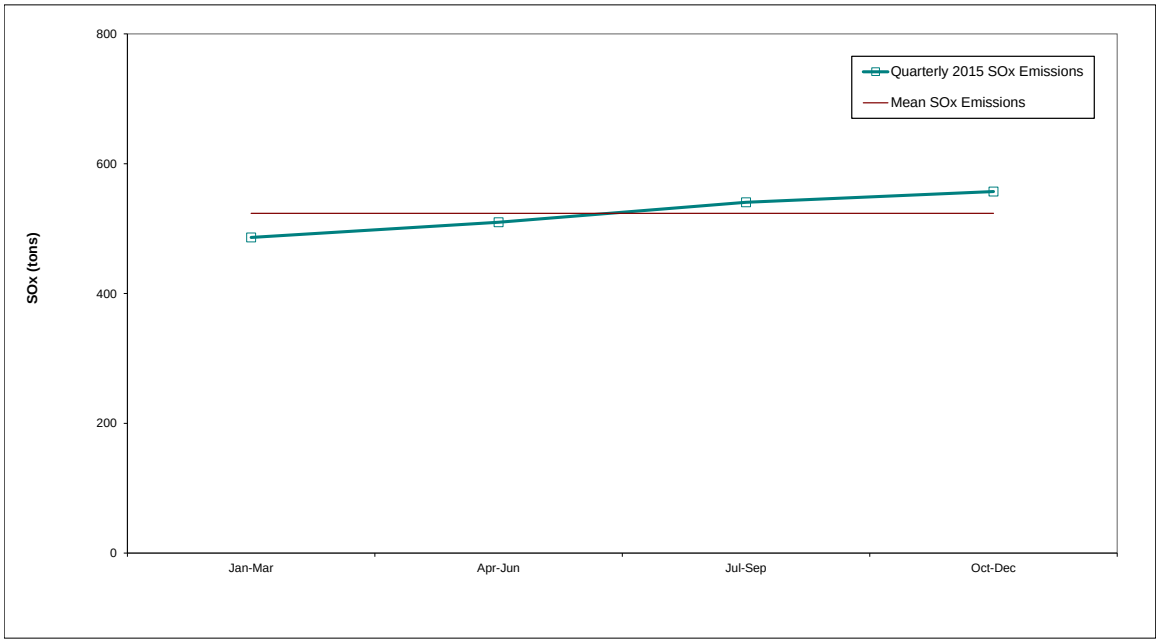
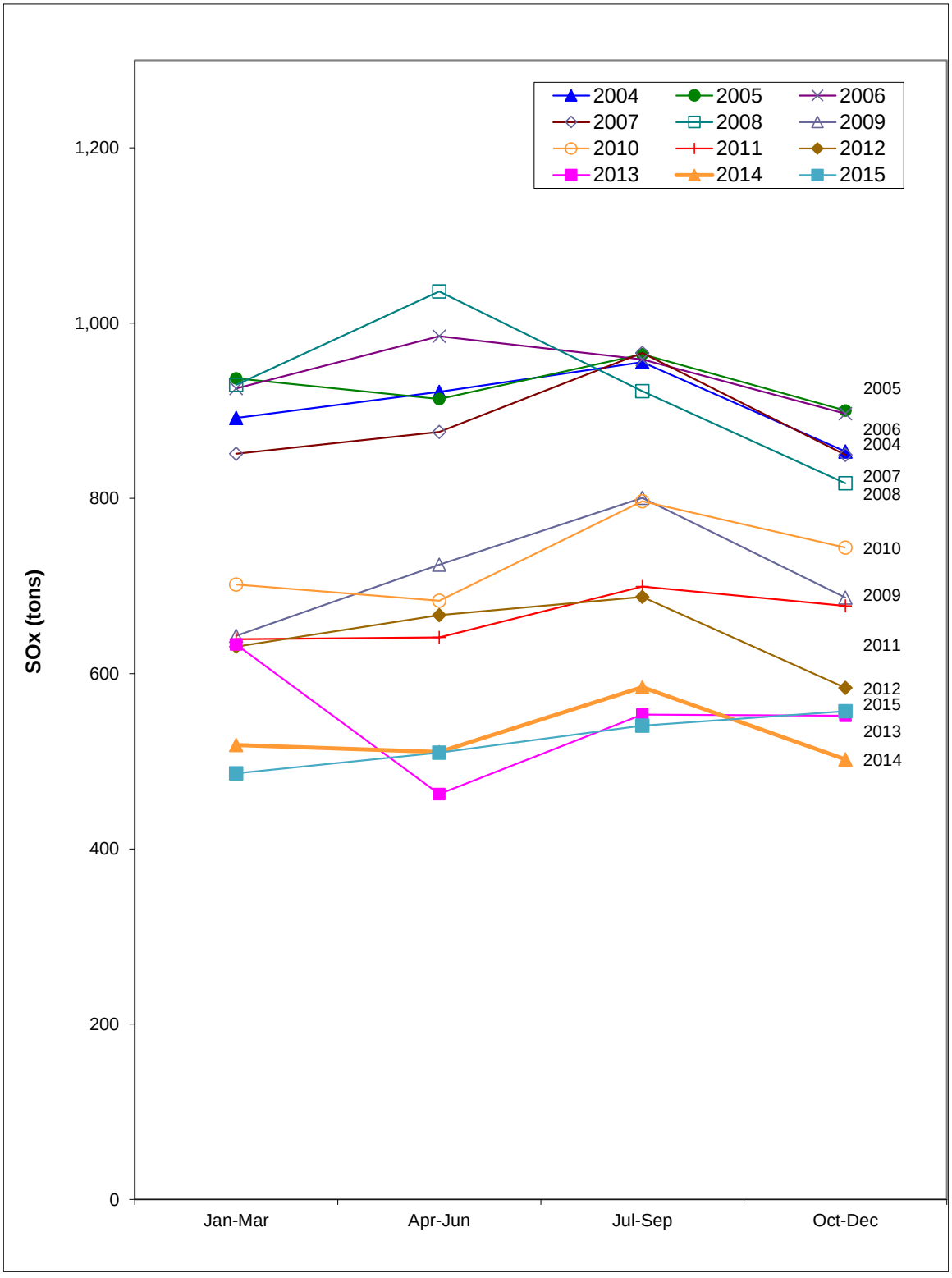


Figure 7-6
Quarterly SOx Emissions from Calendar Years 2004 through 2015



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 the projected impacts from continuing traditional command-and-control regulations and to 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 OEHHA, 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 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 an 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 for ozone was reduced to 0.075 ppm. Table 7-1 shows monitoring results based on this 8-hour federal standard. Effective December 28, 2015, the 8-hour NAAQS for ozone was further reduced to 0.070 ppm, the level of the current California Ambient Air Quality Standard. Table 7-1 shows that the Basin exceeded both the newer 8-hour federal 0.07 ppm standard and the state 0.07 ppm standard by 132 days in 2016. Though the number of days in exceedance of the federal and state standards were the same this year, they were different in 2015. This difference could occur again in the future due to the differing language and methods for deriving exceedance days in the federal and state rules.

Table 7-1 summarizes ozone data for calendar years 2001 through 2016 in terms of the number of days that exceeded the state's 1-hour and 8-hour ozone standards, the 2008 and 2015 federal ambient 8-hour ozone standard, and both the Basin's maximum 1-hour and 8-hour ozone concentrations in each calendar year. This table shows that the number of days that exceeded the 1-hour state and the older 8-hour federal ambient ozone standards in calendar year 2016 were elevated from the previous two years, but still followed a persistent downward trajectory. The Basin's maximum ozone concentrations were very close to the lowest levels since 2001, based on the 8-hour averaging period.

Table 7-1
Summary of Ozone Data

Year	Days exceeding state 1-hour standard (0.09 ppm)	Days exceeding state 8-hour standard (0.07 ppm)	Days exceeding old federal 8-hour standard (0.075 ppm)	Days exceeding new federal 8-hour standard (0.07 ppm)	Basin Maximum 1-hour ozone concentration (ppm)	Basin Maximum 8-hour ozone concentration (ppm)
2001	121	156	132	N/A	0.191	0.146
2002	118	149	135	N/A	0.169	0.148
2003	133	161	141	N/A	0.216	0.200
2004	110	161	126	N/A	0.163	0.148
2005	111	142	116	N/A	0.163	0.145
2006	102	121	114	N/A	0.175	0.142
2007	99	128	108	N/A	0.171	0.137
2008	98	136	121	N/A	0.176	0.131
2009	100	131	113	N/A	0.176	0.128
2010	83	128	109	N/A	0.143	0.123
2011	94	127	107	N/A	0.160	0.136
2012	97	140	111	N/A	0.147	0.112
2013	92	123	106	N/A	0.151	0.122
2014	76	134	93	N/A	0.142	0.114
2015	72	116	83	113	0.144	0.127
2016	85	132	105	132	0.164	0.122

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 average number of hours a person is exposed ("per capita exposure"[3]) to ozone concentrations above the state 1-hour standard of 0.09 ppm. Table 7-2 shows the 1986-88 baseline per capita exposure, 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

[3] 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.

calendar year 2016, the actual per capita exposure for the Basin was 2.64 hours, which represents a 96.7% reduction from the 1986-88 baseline level.

Table 7-2
Per Capita Exposure to Ozone above the State One-Hour Standard of 0.09 ppm (hours)

Calendar Year	Basin	Los Angeles	Orange	Riverside	San Bernardino
1986-88 baseline[1]	80.5	75.8	27.2	94.1	192.6
1994 actual	37.6	26.5	9	71.1	124.9
1995 actual	27.7	20	5.7	48.8	91.9
1996 actual	20.3	13.2	4	42.8	70
1997 actual	5.9	3	0.6	13.9	24.5
1998 actual	12.1	7.9	3.1	25.2	40.2
2000 actual	3.8	2.6	0.7	8.5	11.4
2001 actual	1.73	0.88	0.15	6	5.68
2002 actual	3.87	2.16	0.13	11.12	12.59
2003 actual	10.92	6.3	0.88	20.98	40.21
2004 actual	3.68	2.26	0.50	6.82	12.34
2005 actual	3.11	1.43	0.03	6.06	12.54
2006 actual	4.56	3.08	0.68	8.02	13.30
2007 actual	2.90	1.50	0.35	4.65	10.53
2008 actual	4.14	2.04	0.26	7.50	14.71
2009 actual	2.87	1.54	0.08	3.88	10.54
2010 actual	1.18	0.38	0.11	2.45	4.48
2011 actual	2.10	0.85	0.02	3.46	8.13
2012 actual	2.37	1.05	0.05	2.59	9.78
2013 actual	1.31	0.52	0.07	1.61	5.50
2014 actual	1.84	1.26	0.29	1.47	6.02
2015 actual	1.96	0.76	0.10	2.14	8.47
2016 actual	2.64	1.14	0.07	2.19	11.56
1997 target[2]	48.3	45.5	16.3	56.5	115.6
2000 target[3]	40.2	37.9	13.6	47	96.3

[1] Average over three years, 1986 through 1988.

[2] 60% of the 1986-88 baseline exposures.

[3] 50% of the 1986-88 baseline exposures.

Table 7-2 shows that actual per capita exposures during all the years mentioned were well under the 1997 and 2000 target exposures limits. It should also be noted that air quality in the Basin is a complex function of meteorological conditions and an array of different emission sources, including mobile, area, RECLAIM stationary sources, and non-RECLAIM stationary sources. Therefore, the reduction of per capita exposure beyond the projected level is not necessarily 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 NOx or SOx emission increases are also required to be equipped with BACT, which minimizes to the extent feasible NOx and SOx emissions, which are precursors to particulate matter.

There have been concerns raised that trading RTCs could allow for higher production at a RECLAIM facility, which may indirectly cause higher 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 rules for toxics. Permits generally include limiting throughput conditions for new source review or applicable source specific rules. AB2588 and Rule 1402 could also be triggered based on risk, which would require the facility to take appropriate risk reduction measures.

Under the AER program, facilities that emit either: 1) four tons per year or more of VOC, NOx, SOx, 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[4] 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. 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.

According to SCAQMD's 2015 Annual Report on the AB2588 Air Toxics "Hot

[4] The toxics prioritization procedures can be found at: http://www.aqmd.gov/home/regulations/compliance/toxic-hot-spots-ab-2588

Spots" program[5], staff has reviewed and approved 339 facility HRAs as of the end calendar year 2015. About 95% of the facilities have cancer risks below 10 in a million and 97% 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 during which SCAQMD discusses the health risks from the facility. SCAQMD has conducted such public notification meetings for 53 facilities under the AB2588 Program.

The Board has also established the following action risk levels in Rule 1402 – Control of Toxic Air Contaminants from Existing Sources: a 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. To date, 25 facilities have been required to reduce risks and all of these facilities have reduced risks well below the action risk levels mandated by Rule 1402.

The impact of the above rules and measures are analyzed in Multiple Air Toxic Exposure Studies (MATES), which SCAQMD staff conducts periodically to assess cumulative air toxic impacts to the residents and workers of southern California. The fourth version of MATES (*i.e.*, MATES IV) was conducted over a one year period from July 2012 to June 2013, and the final MATES IV report was released on May 1, 2015[6]. Monitoring conducted at that time indicated that the basin-wide population-weighted air toxics exposure was reduced by 57% since MATES III (conducted from April 2004 to March 2006). The results of these recent MATES studies continue to show that the region-wide cumulative air toxic impacts on residents and workers in southern California have been declining. Therefore, staff has not found any evidence that would suggest that the substitution of NOx and SOx 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.

[5] The 2015 AB2588 Annual Report can be found at: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588_annual_report_2015.pdf?sfvrsn=6

[6] The Final MATES IV Report can be found at: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf

APPENDIX A
RECLAIM UNIVERSE OF SOURCES

The RECLAIM universe of active sources as of the end of Compliance Year 2015 is provided below.

Facility ID	Cycle	Facility Name	Program
800088	2	3M COMPANY	NOx
23752	2	AEROCRAFT HEAT TREATING CO INC	NOx
115394	1	AES ALAMITOS, LLC	NOx
115389	2	AES HUNTINGTON BEACH, LLC	NOx/SOx
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
181505	2	AMERICAN AIRLINES INC	NOx
800196	2	AMERICAN AIRLINES 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
174406	1	ARLON GRAPHICS LLC	NOx
12155	1	ARMSTRONG WORLD INDUSTRIES INC	NOx
122666	2	A'S MATCH DYEING & FINISHING	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
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

Facility ID	Cycle	Facility Name	Program
150201	2	BREITBURN OPERATING LP	NOx
174544	2	BREITBURN OPERATING LP	NOx
25638	2	BURBANK CITY, BURBANK WATER & POWER	NOx
128243	1	BURBANK CITY,BURBANK WATER & POWER,SCPPA	NOx
179957	2	CA LOS ANGELES TIMES SQUARE LLC	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
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	SENTINEL ENERGY CENTER LLC	NOx
50098	1	D&D DISPOSAL INC,WEST COAST RENDERING CO	NOx
63180	1	DARLING INGREDIENTS INC.	NOx
3721	2	DART CONTAINER CORP OF CALIFORNIA	NOx

Facility ID	Cycle	Facility Name	Program
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
142536	2	DRS SENSORS & TARGETING SYSTEMS, INC	NOx
178639	1	ECO SERVICES OPERATIONS LLC	NOx/SOx
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	FREEPORT-MCMORAN OIL & GAS	NOx
175191	1	FREEPORT-MCMORAN OIL & GAS	NOx
346	1	FRITO-LAY, INC.	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx
142267	2	FS PRECISION TECH LLC	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
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

Facility ID	Cycle	Facility Name	Program
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
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
180367	1	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
800080	2	LUNDAY-THAGARD COMPANY	NOx/SOx
38872	1	MARS PETCARE U.S., INC.	NOx
14049	2	MARUCHAN INC	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx
2825	1	MCP FOODS INC	NOx
173290	1	MEDICLEAN	NOx
176952	2	MERCEDES-BENZ WEST COAST CAMPUS	NOx

Facility ID	Cycle	Facility Name	Program
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
112853	2	NP COGEN INC	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	SO CAL HOLDING, LLC	NOx
151594	1	OXY USA, INC	NOx
151601	1	CALIFORNIA RESOURCES PRODUCTION CORPORAT	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	POLYNT COMPOSITES USA INC	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
800417	2	PLAINS WEST COAST TERMINALS LLC	NOx
800419	2	PLAINS WEST COAST TERMINALS LLC	NOx
800420	2	PLAINS WEST COAST TERMINALS LLC	NOx

Facility ID	Cycle	Facility Name	Program
176708	2	ALTAGAS POMONA ENERGY INC.	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	PURENERGY OPERATING SERVICES, LLC	NOx
132192	1	PURENERGY OPERATING SERVICES, LLC	NOx
179137	1	QG PRINTING II CORP	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
114997	1	RAYTHEON COMPANY	NOx
115172	2	RAYTHEON COMPANY	NOx
800371	2	RAYTHEON SYSTEMS COMPANY - FULLERTON OPS	NOx
20203	2	RECONSERVE OF CALIFORNIA-LOS ANGELES INC	NOx
180410	2	REICHHOLD LLC 2	NOx
52517	1	REXAM BEVERAGE CAN COMPANY	NOx
61722	2	RICOH ELECTRONICS INC	NOx
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
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

Facility ID	Cycle	Facility Name	Program
119596	2	SNAK KING CORPORATION	NOx
43201	2	SNOW SUMMIT INC	NOx
4477	1	SO CAL EDISON CO	NOx
5973	1	SO CAL GAS CO	NOx
800127	1	SO CAL GAS CO	NOx
800128	1	SO CAL GAS CO	NOx
8582	1	SO CAL GAS CO/PLAYA DEL REY STORAGE FACI	NOx
14871	2	SONOCO PRODUCTS CO	NOx
160437	1	SOUTHERN CALIFORNIA EDISON	NOx
800338	2	SPECIALTY PAPER MILLS INC	NOx
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 COMPANY-BUILDING 800 COMPLEX	NOx
14736	2	THE BOEING COMPANY-SEAL BEACH COMPLEX	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
97081	1	THE TERMO COMPANY	NOx
109914	1	THERMAL REMEDIATION SOLUTIONS, LLC	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

Facility ID	Cycle	Facility Name	Program
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
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	CITY OF VERNON, VERNON GAS & ELECTRIC	NOx
148896	2	CALIFORNIA RESOURCES PRODUCTION CORP	NOx
148897	2	CALIFORNIA RESOURCES PRODUCTION CORP	NOx
151899	2	CALIFORNIA RESOURCES PRODUCTION CORP	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, one facility was added to the RECLAIM universe in Compliance Year 2015. The included facility is identified below, and the reason for inclusion is also provided.

Facility ID	Cycle	Facility Name	Market	Date	Reason
150201	2	BREITBURN OPERATING LP	NOx	7/7/2015	Reported emissions from permitted sources exceeded four tons NOx in a year

APPENDIX C
RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

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 2015. 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	5814
Facility Name	Gainey Ceramics, Inc.
City and County	La Verne, Los Angeles County
SIC	3260
Pollutant(s)	NOx
1994 Allocation	26,626
Reason for Shutdown	Facility was demolished after the "Gainey" brand was bought by a 3rd party. Staff was unable to obtain further clarification regarding the facility shutdown.

Facility ID	145836
Facility Name	American Apparel Dyeing & Finishing, Inc.
City and County	Hawthorne, Los Angeles County
SIC	2299
Pollutant(s)	NOx
1994 Allocation	0
Reason for Shutdown	The company consolidated operations at another company-owned RECLAIM facility.

Facility ID	167066
Facility Name	Arlon Graphics L.L.C.
City and County	Santa Ana, Orange County
SIC	2672
Pollutant(s)	NOx
1994 Allocation	7,423
Reason for Shutdown	The company consolidated operations at another company-owned RECLAIM facility.

Facility ID	800182
Facility Name	Riverside Cement Co.
City and County	Riverside, Riverside County
SIC	3241
Pollutant(s)	NOx, SOx
1994 Allocation	NOx = 240,204; SOx = 122,284
Reason for Shutdown	The facility cited more attractive utility of land and resources, cost of meeting air pollution regulations, including RECLAIM, Rule 1156 and the SCAQMD compliance burden, and an unfriendly business environment as reasons for shutdown.

Facility ID	115041
Facility Name	Raytheon Company
City and County	El Segundo, Los Angeles County
SIC	3761
Pollutant(s)	NOx
1994 Allocation	32,796
Reason for Shutdown	Facility sold both their equipment and property. RECLAIM staff attempted to contact the parent company for a more descriptive reason for the shutdown, but received no response.

APPENDIX D
FACILITIES THAT EXCEEDED THEIR ANNUAL ALLOCATION FOR COMPLIANCE YEAR 2015

The following is a list of facilities that did not have enough RTCs to cover their NOx and/or SOx emissions in Compliance Year 2015 based on the results of audits conducted by SCAQMD staff.

Facility ID	Facility Name	Compliance Year	Emittant
15504	SCHLOSSER FORGE COMPANY	2015	NOx
18931	TAMCO	2015	NOx
19390	SULLY-MILLER CONTRACTING CO.	2015	NOx
20203	RECONSERVE OF CALIFORNIA-LOS ANGELES INC	2015	NOx
22911	CARLTON FORGE WORKS	2015	NOx
68118	TIDELANDS OIL PRODUCTION COMPANY ETAL	2015	NOx
114997	RAYTHEON COMPANY	2015	NOx
122666	A'S MATCH DYEING & FINISHING	2015	NOx
124723	GREKA OIL & GAS, INC	2015	NOx
131732	NEWPORT FAB, LLC	2015	NOx
138568	CALIFORNIA DROP FORGE, INC	2015	NOx
144455	LIFOAM INDUSTRIES, LLC	2015	NOx
153199	THE KROGER CO/RALPHS GROCERY CO	2015	NOx
172005	NEW-INDY ONTARIO, LLC	2015	NOx
173290	MEDICLEAN	2015	NOx
179137	QG PRINTING II CORP	2015	NOx
180367	LINN OPERATING, INC.	2015	NOx
800181	CALIFORNIA PORTLAND CEMENT CO	2015	SOx

APPENDIX E
REPORTED JOB IMPACTS ATTRIBUTED TO RECLAIM

Each year, RECLAIM facility operators are asked to provide employment data in their APEP reports. The report asks company representatives to quantify job increases and/or decreases, and to report the positive and/or negative impacts of the RECLAIM program on employment at their facilities. This appendix is included in each Annual RECLAIM Audit Report to provide detailed information for facilities reporting that RECLAIM contributed to job gains or losses.

Facilities with reported job gains or losses attributed to RECLAIM:

Facility ID:	800182
Facility Name:	Riverside Cement Co.
City and County:	Riverside, Riverside County
SIC:	3241
Pollutant(s):	NOx, SOx
Cycle:	1
Job Gain:	0
Job Loss:	30
Comments:	Facility shut down on 12-28-2015. The facility claims job losses due to RECLAIM as “part of cost of doing business”, and cited more attractive utility of land and resources, cost of meeting air pollution regulations including Rule 1156 and the SCAQMD compliance burden, and an unfriendly business environment as reasons for shutdown.

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BOARD MEETING DATE: March 3, 2017 AGENDA NO. 39

(Continued from February 3, 2017 Board Meeting)

PROPOSAL: Approve Schedule of Activities to Implement Draft Financial Incentives Funding Action Plan for 2016 AQMP

SYNOPSIS: A Draft Financial Incentives Funding Action Plan was prepared to help identify new revenue sources that the SCAQMD could pursue for incentive funding programs to help accelerate the turnover of existing vehicles and equipment to zero and near-zero emission technologies and help the region meet federal air quality standards. The Draft Action Plan includes a discussion of potential funding opportunities, public process, and a proposed schedule of activities to be initiated over the next year. The proposed activities include a schedule for staff to work with stakeholders through a public process to identify a set of funding opportunities to pursue, educating the state legislature and Congressional members on the funding needs of the region, and reporting to the Board on progress. This action is to seek the Board's approval on the schedule of activities proposed in the Draft Action Plan and have staff initiate the activities based on the Board's direction.

COMMITTEE: Mobile Source, July 22, 2016 and October 21, 2016; and Governing Board, January 6, 2017; Reviewed

RECOMMENDED ACTION:
Approve schedule of activities in Table 1 to implement the Draft Financial Incentives Funding Action Plan for the 2016 AQMP

Wayne Nastri
Executive Officer

JW:MMM:HH

Background

The Draft Final 2016 AQMP includes many regulatory measures, but identified the need for additional incentives funding to accelerate turnover of older vehicles and equipment to zero and near-zero emission technologies. The early turnover is critical in the near-term (in the next six to seven years) as new regulatory proposals will take some time before the actions can be fully implemented. As part of the development of the

Draft Final 2016 AQMP, an analysis was performed to estimate the level of funding incentives that would be needed in the next seven to 15 years to turn over existing vehicles and equipment if no other actions are taken. The analysis was conducted with the primary purpose of helping to achieve the NOx emission reductions associated with the State SIP Strategy "Further Deployment of Cleaner Technologies" measures. In addition to the State SIP Strategy mobile source measures, staff estimated funding incentives needed to help reduce stationary source emission reductions. The total estimated funding needed is approximately $10 to $14 billion over the next 15 years. A draft Financial Incentives Funding Action Plan (Action Plan or Plan) was prepared identifying potential opportunities to generate revenue for future incentives funding programs and proposed activities to pursue funding. The Draft Action Plan is available at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draftfinancialincentivefunddec2016.pdf.

The Draft Action Plan provides a discussion of 17 potential funding opportunities that the SCAQMD and the region could pursue. A list of potential funding opportunities to provide funding opportunities to the South Coast Air Basin and Coachella Valley is provided in Table ES-1 of the Draft Final Action Plan. The comprehensive list of potential opportunities does not reflect staff's recommendation to pursue such opportunities, but was compiled to be a starting point for public input. The Draft Action Plan provides discussion on potential next steps needed to realize such funding. Many of the potential funding opportunities will require state or federal legislative actions, and some opportunities may require voter approval. The Draft Action Plan does not provide an analysis of the SCAQMD's ability or authority to authorize the potential opportunities and does not provide analysis of the legislative challenges to enact the funding opportunities. This analysis is proposed to be developed as part of the public process that will be undertaken to pursue the funding opportunities. Specific proposals will be brought to the Legislative Committee and/or other Board Committees as appropriate for a full discussion and the Board's consideration before proceeding with specific funding opportunities.

Public Process

The Draft Financial Incentives Funding Action Plan was released on December 16, 2016 for a 30-day comment period. Prior to the release of the Draft Action Plan, the various elements of the Draft Action Plan were discussed with the 2016 AQMP Advisory Group and overview presentations were made to the Mobile Source Committee. In addition, the Draft Action Plan was presented to the Board at its January 2017 meeting to receive input and public comments on the Plan.

Proposal
Staff is proposing that the Draft Funding Action Plan remain a living document to serve as a starting point for public discussion. However, based on comments received regarding the guiding principles (see discussion under Public Comments), staff has revised the guiding principles (specifically, Guiding Principle 3) to further clarify their intent (see Attachment A). In addition, the proposed activities and a schedule to pursue and secure new funding proposed in the Draft Action Plan (see Chapter V of the Draft Action Plan) was drafted in November 2016 and needs to be updated. A list of the proposed activities is provided below.

Actions at the National Level

- Create a national collaborative – develop new partnerships with states and regions that are currently in nonattainment of existing federal air quality standards or may be in nonattainment of future air quality standards
- Create a National Clean Air Investment and Cleanup Fund
- Develop public/private partnerships to help identify and/or leverage public funding

Actions at the State Level

- Prioritize existing funding programs to maximize the co-benefits of criteria pollutant and greenhouse gas emission reductions
- Initiate new funding programs through state legislative process
- Develop public/private partnerships to help identify and/or leverage public funding

Actions at the Regional/Local Level

- Build consensus to develop new local ballot measures
- Expand implementation of the District's Strategic Alliance Initiative
- Develop public/private partnerships

Table 1 provides a proposed schedule of activities and milestones to pursue potential funding opportunities.

TABLE 1
Proposed Schedule and Milestones to Pursue Funding Opportunities

Activity	Proposed Schedule
Continue discussions with NACAA and Ultra-Low NOx Petition Co-Petitioners on formation of national collaborative	• December 2016 – February 2017
Work with CAPCOA, CARB, and the West Coast Collaborative on forming coalitions to support additional funding opportunities	• December 2016 – March 2017
Convene Working Group to discuss/identify and prioritize funding opportunities to pursue	• February 2017
Report to SCAQMD Legislative Committee and/or other Board Committees as appropriate on process to move forward	• Within two months from date of adoption of Final 2016 AQMP
On-Going Working Group Meetings • Seek input on the various funding opportunities and prioritize potential opportunities to pursue • Develop timelines to pursue funding • Form coalition(s) to support legislative-related activities to pursue funding	• On-going on a monthly basis for six months from date of adoption of Final 2016 AQMP, quarterly or semi-annually after six months
Report to SCAQMD Legislative Committee and/or other Board Committees, as appropriate, on progress • Discuss specific funding opportunities to pursue • Specific actions for Committee's consideration and Board approval	• Quarterly or semi-annually from date of adoption of Final 2016 AQMP; monthly as needed to consider specific actions

This action is to approve the proposed schedule of activities provided in Table 1. Upon approval by the Board of the proposed schedule of activities and the approval of the 2016 AQMP, staff will initiate public discussions on pursuing funding and report to the Legislative Committee and/or other Board Committees, as appropriate, on the progress in pursuing funding. Specific proposals will be brought to the Legislative Committee and/or other Board Committees as appropriate for a full discussion and the Board's consideration to proceed with the pursuit of the specific funding proposal(s).

Public Comments
Since the release of the Draft Plan, staff received comments requesting clarification on the intent of the proposed guiding principles; recognition that certain mobile source emission inventory categories have been revised; the challenges posed with the potential funding opportunities; and whether the Funding Action Plan will be submitted into the SIP. In addition, comments on the need for a Funding Action Plan and identifying potential revenue sources for future incentives funding were received as part of the 2016

AQMP public process. Responses to those comments are provided as part of the 2016 AQMP public review process.

Three written comment letters were received by close of business January 20, 2017. The three comment letters are provided at: www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan. The comments are similar to those received verbally at the 2016 AQMP Advisory Group and Mobile Source Committee meetings, and the January 2017 Board meeting. A summary of the comments and staff responses is provided below.

- Comment: Clarification on Guiding Principles (3) and (6) regarding the relationship between the impact on the funding source and encouragement of maximum use of funding by other entities.

  Response: Staff is providing revisions to the Guiding Principle (3) to clarify its intent. (See Attachment A)

- Comment: Recommendation of additional guiding principle stating that "any financial incentives be funded and implemented in ways that support the economy of the region and do not put South Coast businesses at a competitive disadvantage to other areas".

  Response: Staff has revised Guiding Principle (7) to reflect the concept of this recommendation.

- Comment: Clarification that the Draft Funding Action Plan is not proposed to be submitted to U.S. EPA for incorporation into the SIP.

  Response: The Draft Funding Action Plan is not proposed to be submitted to U.S. EPA for inclusion into the SIP.

- Comment: The analysis of the funding levels are based on draft emission inventories provided in earlier public releases of the 2016 AQMP. There is a need to recognize the latest emission inventories and potentially update the analysis of funding levels.

  Response: Staff will be providing updated information on emissions and funding levels as part of the public process.

- Comment: Through the working group process, address key topics missing from the funding plan including "inherent tension between seeking the most cost effective reductions versus investing in advanced control technologies that are economically infeasible and would not be made without financial support";

discussions on funding for stationary sources as well as mobile sources; and how the District will prioritize and schedule its resources and actions among the many identified potential funding sources.

Response: The Draft Funding Action Plan was not intended to cover every topic related to funding. As the Commenter acknowledges, many of the topics raised will be discussed through the public process.

- Comment: The Cargo Container Fee potential funding opportunity inaccurately reflects various proposals over the last ten years. The potential funding opportunity should be removed or rewritten and more specific funding opportunities should be provided.

  Response: Staff appreciates the comments on different proposals discussed under the Cargo Container Fee concept, which will be considered during the public process. In addition, the various funding opportunities and development of funding mechanisms will be discussed in greater detail as part of the public process.

- Comment: Incentives for near-zero heavy-duty trucks should be prioritized to maximize near-term emission reductions and be discussed through the Funding Working Group to rank potential funding sources, secure funding, and determine emission reduction priorities.

  Response: Staff agrees that there is a need to maximize near-term emission reductions. As provided in Table 1, the working group objectives are to prioritize funding and identify mechanisms to secure funding.

Benefits to SCAQMD

The successful implementation of the 2016 AQMP will be based on adoption of new rules and regulations at all levels of government and identification and procurement of additional incentive funding needed in the near-term to accelerate turnover of older vehicles and equipment. The Draft Final Financial Incentives Funding Action Plan provides a series of activities to pursue revenue sources to fund financial incentive programs.

Resource Impacts

There will be some administrative and program costs associated with implementing the Funding Action Plan. Detailed costs have not been estimated at this time; however, staff resources have been identified in the FY 2016-17 Budget.

Attachment

Attachment A: Guiding Principles to Secure and Allocate Incentive Funds
Attachment B: Board Meeting Presentation

ATTACHMENT A

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

GUIDING PRINCIPLES TO SECURE AND ALLOCATE INCENTIVES FUNDS

Guiding Principles to Secure and Allocate Incentives Funds

As the SCAQMD moves forward in seeking new funding opportunities, SCAQMD staff will follow a set of guiding principles that are based on public comments received on the Draft 2016 AQMP.

1) **Evaluate All Potential Opportunities**
   As the South Coast Air Quality Management District (SCAQMD) works to identify sustained sources of financial incentives revenue needed in the next seven to 15 years to help accelerate the turnover of legacy vehicles and equipment to modern near-zero emissions vehicles and equipment and where feasible, zero-emission vehicles and equipment, the SCAQMD will evaluate all potential opportunities with a recognition that revenues may come from multiple sources that are locally, state, and/or federally derived.

2) **No Diversion from Purposes Other than Air Quality**
   Any identified source(s) of revenue shall not be from the diversion of existing or future funds slated for purposes other than air quality (e.g., funding for transportation infrastructure improvement projects shall not be diverted for use to accelerate turnover of existing vehicles).

3) **Minimize Economic Impact to the Funding Source**
   Any potential revenue source proposed to be pursued shall be analyzed and developed in a manner that: 1) wherever possible, incentive funding should be generated from those responsible for air pollution in a fair and proportionate manner (i.e., those who pollute the most should pay the most); 2) the burden for paying for incentive funding should be minimized to the maximum extent possible on those who can least afford it; and 3) where possible, maximize the use of funding back to the revenue source while being mindful of Guiding Principle No. 7.

4) **Collaborative Approach to Prioritize Revenue Sources to Pursue**
   The SCAQMD will work with all interested stakeholders to build consensus on a prioritized specific set of potential revenue sources that could be pursued at the local, state, and/or federal level over the next one to three years.

5) **Develop Stakeholder Coalition**
   The SCAQMD will work to develop a coalition of stakeholders that will help inform state legislators and Congressional members on the need for such funding and the benefits such funding will provide to meet current and future air quality standards, avoiding sanctions, and with a recognition that there will be substantial co-benefits of greater greenhouse gas emission reductions.

6) **Recognize Criteria Pollutant Emission Benefits from Projects Funded by Other Agencies**

The SCAQMD will work with entities such as county transportation agencies, Southern California Association of Governments (SCAG), local governments, Port of Long Beach, and Port of Los Angeles to ensure that the use of funding secured by these entities for the primary purpose of climate change, energy efficiency, or improved operational efficiencies provide additional criteria pollutant reduction co-benefits to the South Coast Air Basin and Coachella Valley to the greatest extent feasible.

7) **Maximize Disbursements/Benefits to Environmental Justice and Disadvantaged Communities**

Any funding realized shall be disbursed in such a manner that maximizes benefits to residents living in environmental justice and disadvantaged communities that are adversely affected by poor air quality, while ensuring that the region attains federal air quality standards as early as possible while continuing to foster the region's recovering economy and being sensitive to the region's economic competitiveness with other areas.

Approve Schedule of Activities to Implement Draft Financial Incentives Funding Action Plan for 2016 AQMP

Agenda No. 26

SCAQMD Governing Board Meeting

February 3, 2017

Draft Financial Incentives Funding Action Plan

- Guiding Principles to Secure and Allocate Incentives Funds
- Identifies 17 Potential Sources of Funding Revenues for Public Discussion
- Proposes Activities to Secure Additional Funding Revenues
- 3 Written Comments; Other Comments Provided as Part of 2016 AQMP Public Process

Draft Guiding Principles to Secure and Allocate Incentive Funds

1. Evaluate all potential opportunities
2. No diversion from purposes other than air quality
3. Minimize economic impact to the funding source
4. Collaborative approach to prioritized potential revenue sources
5. Develop coalition to educate elected officials on funding needs and benefits
6. Ensure funding provides criteria pollutant reduction co-benefits
7. Maximize disbursements/benefits to environmental justice and disadvantaged communities

Public Comments

- Clarifying Intent of Guiding Principle on Economic Impact on Funding Source
- Need to Prioritize Funding Opportunities and Resources
- Clarification on Emission Inventories Used for Funding Analysis
- Support for Early Emission Reductions Through Incentives for Near-Zero Emission Technologies
- Sensitivity to the Region's Economic Competiveness with Other Areas

Proposed Activities to Pursue New Funding

Actions at the National Level

- Create a national collaborative – develop new partnerships with states and regions that are currently in nonattainment of existing federal air quality standards or may be in nonattainment of future air quality standards
- Create a National Clean Air Investment and Cleanup Fund
- Develop public/private partnerships to help identify and/or leverage public funding

Proposed Activities to Pursue New Funding

Actions at the State Level

- Prioritize existing funding programs to maximize the co-benefits of criteria pollutant and greenhouse gas emission reductions
- Initiate new funding programs through state legislative process with Board Direction
- Develop public/private partnerships to help identify and/or leverage public funding

Proposed Activities to Pursue New Funding

Actions at the Regional/Local Level

- Build consensus to develop potential local ballot measures
  (with input from the Board and the public)
- Expand Implementation of the District's Strategic Alliance Initiative
- Develop public/private partnerships

Activities, Schedule, and Reporting

Activity	Proposed Schedule
Continue discussions with NACAA and Ultra-Low National Low-NOx Petition Co-Petitioners on formation of national collaborative	December 2016 – February 2017
Work with CAPCOA, CARB, and the West Coast Collaborative on forming coalitions to support additional funding opportunities	December 2016 – March 2017
Convene Working Group to discuss/identify and prioritize funding opportunities to pursue	February 2017
Report to SCAQMD Legislative Committee and/or other Board Committees as appropriate on process to move forward	Within two months from date of adoption of Final 2016 AQMP

Activities, Schedule, and Reporting

Activity	Proposed Schedule
On-Going Working Group Meetings • Seek input and prioritize funding opportunities • Develop timelines to pursue funding • Form coalition(s) to support legislative-related activities to pursue funding	On-going on a monthly basis for six months from date of adoption of Final 2016 AQMP, quarterly or semi-annually after six months
Report to SCAQMD Legislative Committee and/or other Board Committees, as appropriate, on progress • Discuss specific funding opportunities to pursue • Specific actions for Committee's consideration and Board approval	Quarterly or semi-annually from the date of adoption of the Final 2016 AQMP; monthly as needed to consider specific actions

Staff Recommendation

- Approve Schedule of Activities to Implement Draft Financial Incentives Funding Action Plan

Back to Agenda

BOARD MEETING DATE: March 3, 2017 AGENDA NO. 40

PROPOSAL: Approve Amendments to SCAQMD *Salary Resolution*, and Agreements with Executive Officer and General Counsel

SYNOPSIS: This item will consider approval of an increase of the Executive Officer's salary. In addition, SCAQMD has established procedures for providing severance to Executive Management staff upon termination. This item seeks approval to modify these procedures to bring them up to date, as well as to provide clarification.

COMMITTEE: Personnel; February 10, 2017. Less than a quorum was present; the Committee Members concurred that this item be forwarded to the full Board for consideration.

RECOMMENDED ACTIONS:
Approve Amendments to *Salary Resolution* and Agreements with Executive Officer and General Counsel to increase the Executive Officer's salary, and to modify the severance provisions for Executive Management staff.

Dr. William A. Burke
Chairman

AJO:tc

Background
The current Executive Management Agreement with the Executive Officer provides a base salary amount of $252,168. The Executive Management Agreement for serving as the Acting Executive Officer, provided for the higher base salary of $271,080.68, which accounted for the required employee contribution to a District retirement savings account in lieu of participation in the District's pension system. When the current Executive Management contract was prepared, the base salary was not carried over, but was reduced to $252,168 to reflect the fact that the Executive Officer was now participating in the District's pension system.

Executive Management staff, which includes Executive Officer, General Counsel, and Designated Deputies, are at-will employees. As such, they can be terminated for cause or without cause (see Section 59d of the *Salary Resolution*). SCAQMD has established procedures, either through the *Salary Resolution* or through contract language, for providing severance to Executive Management staff upon termination. This item seeks approval to modify these procedures to bring the termination and severance structure up to date, as well as to provide clarification.

Under the current severance process, the at-will employee receives three months of severance pay upon termination. If the employee has completed five years of service with SCAQMD, he or she is provided six months of severance pay. Severance pay currently includes salary, payment of insurance premiums, and payment of retirement contribution. Employees have the option, with SCAQMD's approval, to take severance pay in a lump sum amount or in biweekly payments. Similar provisions are in the agreement for the General Counsel.

Proposal

This item seeks to adjust the base salary provided to the Executive Officer. The Executive Management Agreement would be amended to increase the base salary to $271,080.68, which aligns the base salary with the amount the Executive Officer received when serving in an Acting capacity. It addresses the inadvertent discrepancy between the base salary from the prior Executive Management Agreement and the current agreement. This salary would be consistent with that paid to Executive Officers at other air districts, and also recognizes the Executive Officer's performance since April 2016.

In addition, the proposed amendments would limit the circumstances for which an at-will employee is eligible for severance pay. Also, such employees will no longer have the option to receive severance pay in biweekly payments, and they will not be entitled to request out-placement services at SCAQMD expense. Finally, the proposed amendments narrow the definition of severance pay to exclude payment for insurance premiums and payment for retirement contribution by SCAQMD. Clarification will also be provided with amendments to state that the at-will employee is not entitled to severance pay in the event of a voluntary resignation.

In consideration of the new limitations for severance, the proposed amendments would provide the employee with six months of severance pay upon termination. Also, upon the completion of two years of service with SCAQMD, the employee would be provided 12 months of severance pay. To provide clarification for eligibility of the 12-month severance amount, past service time will be defined to include: full-time employment with SCAQMD, work in an Acting capacity under contract with SCAQMD, and service as a Governing Board Member. The proposed amendments bring the severance structure in line with the current agreement with the Executive Officer, with the exception of the threshold for the 12-month severance amount and the definition of past service time. For

consistency, the Executive Officer's Executive Management Agreement will be amended to bring the threshold to two years of service and to add the definition of past service.

Resource Impacts
There are minimal potential financial impacts for this action, which would be paid from the Salary fund category in SCAQMD's budget.

Attachments
Exhibit A – Executive Management Agreement-Executive Officer, strikeout/underline
Exhibit B – Executive Management Agreement-General Counsel, strikeout/underline
Exhibit C – SCAQMD *Salary Resolution*, strikeout/underline
Exhibit D – Board Resolution to Amend SCAQMD *Salary Resolution*

EXHIBIT A

EXECUTIVE MANAGEMENT AGREEMENT
between
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
and
EXECUTIVE OFFICER

I. TERMS OF AGREEMENT

B. Effective December 5, 2016, the Executive Officer shall receive an annual base salary of ~~$252,168.00~~271,080.68. The term "base salary" shall not include any benefits that the Executive Officer shall receive under the terms of this Agreement. The District Board may consider increases to the Executive Officer's base salary, at the time and in the manner it deems appropriate**.** Said annual salary shall be less federal and state taxes which are also applicable to other employees of the District and shall be payable every two weeks commencing on the first applicable payday following Board approval of this Agreement.

[…]

IV. TERMINATION

B. Severance. In consideration of Appointing Authority having the right to terminate Executive Officer pursuant to Paragraph A(4), if Executive Officer is terminated by the District pursuant to Paragraph A(4), Executive Officer shall be entitled to receive six (6) months of severance pay. However, at such time as Executive Officer has completed ~~five~~ two years of service with the District (beginning April 5, 2016), he shall be entitled to receive twelve months of severance pay. Severance pay means salary only. Severance shall be paid in one lump-sum payment.

1. Severance is in recognition of past service since the District has decided to terminate or not to renew Executive Officer's Agreement. Past Service includes the time served in any of the following capacities: full-time employment with SCAQMD, work in an Acting capacity under contract with SCAQMD, and service as a Governing Board Member. Severance shall not apply to any Executive Officer who is terminated for reasons set forth in Paragraphs 1, 2, 3, 5, 6 (except as set forth herein), 7, 8, 9, 10, and 11.

2. In the event Executive Officer voluntarily resigns his position as Executive Officer, he shall provide a minimum of thirty days' notice, unless the Parties agree otherwise. In the event Employee voluntarily resigns his employment, he shall not be entitled to any severance pay.

EXHIBIT B

EXECUTIVE MANAGEMENT AGREEMENT
between
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
and
GENERAL COUNSEL

IV. TERMINATION

B. Severance. In consideration of Appointing Authority having the right to terminate General Counsel pursuant to Paragraph A(4), if General Counsel is terminated by the District pursuant to Paragraph A(4) ~~or General Counsel terminates his employment because the Appointing Authority decides to significantly change General Counsel's job responsibilities as defined in Section II, Duties of General Counsel (a change in organizational structure or reporting relationship, in and of itself, does not constitute a significant change of General Counsel job responsibilities as defined herein and in Section II, Duties of General Counsel), or to reduce General Counsel's salary or other financial benefits by a greater percentage than an applicable across-the-board reduction for the majority of management employees, and such decision by Appointing Authority is in writing,~~ General Counsel shall be entitled to receive ~~three~~ six months of severance pay; however, at such time as General Counsel has completed ~~five~~ two years of service with the District, he shall be entitled to receive ~~six~~ 12 months of severance pay.

1. ~~Severance pay shall include payment of full salary, payment of life, health, dental, and other District-paid insurance premiums, and payment for retirement contribution. Severance pay shall not include accrual of sick leave and/or vacation or any other benefits during the severance pay period. General Counsel may elect to receive severance compensation in one lump sum or, with the District's consent, in bi-weekly payments throughout the severance period. In the event General Counsel elects to receive a lump sum payment of severance he will receive a lump sum payment equal to the contribution the District would have made on behalf of General Counsel for insurance and retirement for the term of the severance period. Any lump sum payment for severance pay will be paid with General Counsel's final paycheck or, if not practicable to the District, on the subsequent pay day. Should General Counsel elect to receive severance pay in bi-weekly payments, and the District consents thereto, the District will pay contributions for insurance and retirement benefits directly to the insurance and retirement benefit providers. The District shall not incur any liability for interest to General Counsel on severance pay when General Counsel exercises the option to accept bi-weekly severance payment for the severance pay period.~~ Severance pay means salary only. Severance shall be paid in one lump-sum payment.

2. General Counsel ~~may~~ will take, in a lump sum at the time of his termination, payment for any unused vacation, sick leave, and/or other leave time paid to management employees at termination. ~~However, if General Counsel elects to receive, and the District agrees to permit General Counsel to receive, severance pay in bi-weekly payments for the severance pay period all such unused vacation, sick leave, and/or other leave time will be paid in a lump sum to General Counsel at the end of the severance period. The District shall not incur any liability to General Counsel for interest on such accrued vacation, sick leave, and/or other leave time that is not paid to General Counsel until the end of the severance pay period.~~

3. Severance is in recognition of past service since the District has decided to terminate or not to renew General Counsel's Agreement. Past Service includes the time served in any of the following capacities: full-time employment with SCAQMD, work in an Acting capacity under contract with SCAQMD, and service as a Governing Board Member. Severance shall not apply to General Counsel if terminated for reasons set forth in Paragraphs 1, 2, 3, 5, 6 (except as set forth herein), 7, 8, 9, 10, and 11.

4. ~~If General Counsel has five or more years of service with the District and is entitled to receive severance pay, he also shall be entitled to request out-placement services. If General Counsel elects to receive severance payments throughout the severance period, General Counsel may request outplacement services at any time during the severance period. District will pay for these services in an amount not to exceed ten percent of General Counsel's annual base salary. General Counsel may select the outplacement firm, which shall be an established firm whose business is to secure positions in General Counsel's employment field. General Counsel's selection of an outplacement firm is subject to approval by the District. Any payment made by the District in accordance with this Agreement will be made directly to the outplacement firm~~. In the event General Counsel voluntarily resigns his position as General Counsel, he shall not be entitled to any severance pay.

EXHIBIT C

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

SALARY RESOLUTION

Section 60. SEVERANCE

In consideration of the Appointing Authority having the right to terminate Designated Deputies pursuant to Section 59 above, if a Designated Deputy is terminated by SCAQMD pursuant to Section 59 d above, ~~or a Designated Deputy terminates his/her employment because the Appointing Authority decides to significantly change the Designated Deputy's job responsibilities as defined in the Designated Deputy class specification (a change in organizational structure or reporting relationship, in and of itself, does not constitute a significant change of a Designated Deputy's job responsibilities as defined in the Designated Deputy class specification), or either the Appointing Authority or SCAQMD's Board decides to reduce a Designated Deputy's salary or other financial benefits by a greater percentage than an applicable across-the-board reduction for the majority of management employees, and such decision by the Appointing Authority or SCAQMD's Board is in writing, or the same salary increase approved for management employees is not granted to a Designated Deputy as provided for in Article 2, Section 55 above,~~ or the terms of granting severance are amended by SCAQMD's Board, the Designated Deputy shall be entitled to receive ~~three~~ six months of severance pay; however, at such time as a Designated Deputy has completed ~~five~~ two years of service with SCAQMD, he/she shall be entitled to receive ~~six~~12 months of severance pay.

a. ~~Severance pay shall include payment of full salary, payment of life, health, dental, and other~~ SCAQMD ~~paid insurance premiums, and payment for retirement contribution. Severance pay shall not include accrual of sick leave and/or vacation or any other benefits during the severance pay period. Designated Deputies may elect to receive severance compensation in one lump sum or, with SCAQMD's consent, in biweekly payments throughout the severance period. In the event a Designated Deputy elects to receive a lump sum payment of severance he/she will receive a lump sum payment equal to the contribution SCAQMD would have made on behalf of the Designated Deputy for insurance and retirement for the term of the severance period. Any lump sum payment for severance pay will be paid with the Designated Deputy's final paycheck or, if not practicable to SCAQMD, on the subsequent pay day. Should the Designated Deputy elect to receive severance pay in biweekly payments, and SCAQMD consents thereto, SCAQMD will pay contributions for insurance and retirement benefits directly to the insurance and retirement benefit providers. SCAQMD shall not incur any liability for interest to a Designated Deputy on severance pay when the Designated Deputy exercises the option to accept biweekly severance payment for the severance pay period.~~ Severance pay means salary only. Severance shall be paid in one lump-sum payment.

~~b.~~ A Designated Deputy ~~may~~ will take, in a lump sum at the time of his/her termination, payment for any unused vacation, sick leave, and/or other leave time paid to management employees at termination. ~~However, if a Designated Deputy elects to receive, and SCAQMD agrees to~~

~~permit the Designated Deputy to receive, severance pay in biweekly payments for the severance pay period, all such unused vacation, sick leave, and/or other leave time will be paid in a lump sum to the Designated Deputy at the end of the severance period. SCAQMD shall not incur any liability to Designated Deputies for interest on such accrued vacation, sick leave, and/or other leave time that is not paid to such Designated Deputies until the end of the severance pay period.~~

c. Severance is in recognition of past service since SCAQMD has decided to terminate the services of the Designated Deputy. Past Service includes the time served in any of the following capacities: full-time employment with SCAQMD, work in an Acting capacity under contract with SCAQMD, and service as a Governing Board Member. Severance shall not apply to any Designated Deputy who is terminated for reasons set forth in Section 59 a, b, c, e, f (except as set forth herein), g, h, i, j, and k.

d. ~~If a Designated Deputy has five or more years of service with SCAQMD and is entitled to receive severance pay, he/she also shall be entitled to request out-placement services. If a Designated Deputy elects to receive severance payments throughout the severance period, the Designated Deputy may request outplacement services at any time during the severance period. SCAQMD will pay for these services in an amount not to exceed ten percent of the Designated Deputy's annual salary. The Designated Deputy may select the outplacement firm, which shall be an established firm whose business is to secure positions in the Designated Deputy's employment field. The Designated Deputy's selection of an outplacement firm is subject to approval by SCAQMD. Any payment made by SCAQMD in accordance with this contract will be made directly to the outplacement firm.~~In the event a Designated Deputy voluntarily resigns his or her employment, he or she shall not be entitled to any severance pay.

e. Notwithstanding any other provision of this Resolution, employees and former employees must comply with the provisions of Government Code §53243 through §53243.4, as in effect January 1, 2012.

EXHIBIT D

RESOLUTION NO. 17-_____

A Resolution of the South Coast Air Quality Management District Governing Board to amend SCAQMD's *Salary Resolution*, to approve, for Designated Deputies, amendments to the severance provisions in the *Salary Resolution*.

WHEREAS, the Governing Board of the South Coast Air Quality Management District exercises its duty to review and determine appropriate wages, hours, and other terms and conditions of employment provided to its employees.

THEREFORE, BE IT RESOLVED that the Board of the South Coast Air Quality Management District, in a regular session assembled on March 3, 2017, in Diamond Bar, California, does hereby amend SCAQMD's *Salary Resolution*, as set forth in the attachment hereto and incorporated by reference herein, modifying the terms and conditions for severance set forth in Section 60.

AYES:

NOES:

ABSTAIN:

ABSENT:

_____ _____

Date ***Clerk of the Boards***