BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

# BOARD OF DIRECTORS' REGULAR MEETING

## July 25, 2007

A meeting of the Bay Area Air Quality Management District Board of Directors will be held at 9:45 a.m. in the 7th floor Board Room at the Air District headquarters, 939 Ellis Street, San Francisco, California.

**Questions About an Agenda Item**

The name, telephone number and e-mail of the appropriate staff person to contact for additional information or to resolve concerns is listed for each agenda item.

**Meeting Procedures**

The public meeting of the Air District Board of Directors begins at 9:45 a.m. The Board of Directors generally will consider items in the order listed on the agenda. However, any item may be considered in any order.

After action on any agenda item not requiring a public hearing, the Board may reconsider or amend the item at any time during the meeting.

# BOARD OF DIRECTORS' REGULAR MEETING
# A G E N D A

**WEDNESDAY** **BOARD ROOM**
**JULY 25, 2007** **7TH FLOOR**

**9:45 A.M.**

## CALL TO ORDER

Opening Comments — Chairperson, Mark Ross
Roll Call — Clerk of the Boards
Pledge of Allegiance

## PUBLIC COMMENT PERIOD

**Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3** *Members of the public are afforded the opportunity to speak on any agenda item. All agendas for regular meetings are posted at District headquarters, 939 Ellis Street, San Francisco, CA, at least 72 hours in advance of a regular meeting. At the beginning of the regular meeting agenda, an opportunity is also provided for the public to speak on any subject within the Board's subject matter jurisdiction. Speakers will be limited to three (3) minutes each.*

## COMMENDATION/PROCLAMATION

*The Board of Directors will recognize Peter F. Hess, PE, DEE, QEP, for his 33 years of dedicated service to the Air District.*

## CONSENT CALENDAR (ITEMS 1–7)

**Staff/Phone (415) 749-**

1. Minutes of June 20, 2007 — **M. Romaidis/4965** mromaidis@baaqmd.gov

2. Communications — **J. Broadbent/5052** jbroadbent@baaqmd.gov

   *Information only.*

3. District Personnel on Out of State Business Travel — **J. Broadbent/5052** jbroadbent@baaqmd.gov

   *In accordance with Section 5.4 (b) of the District's Administrative Code, Fiscal Policies and Procedures Section, the Board is hereby notified that the attached memoranda lists District personnel who traveled on out-of-state business.*

4. Quarterly Report of Air Resources Board Representative Honorable Jerry Hill — **J. Broadbent/5052** jbroadbent@baaqmd.gov

5. Quarterly Report of the Executive Office — **J. Broadbent/5052** jbroadbent@baaqmd.gov

   *A summary of Board of Director and Advisory Council meeting activities for the second quarter is provided for information only.*

6. Consider Establishing a New Classification of Organizational Development and Training Specialist with Salary Set at Pay Range 134 **J. Broadbent/5052**
**jbroadbent@baaqmd.gov**

*The Board of Directors will consider approval of the establishment of a new classification of Organizational Development and Training Specialist with salary set at pay range 134.*

7. Approval of Acceptance of Disclosure of Costs for Optional Retirement Benefit as Required by Government Code Section 7507 **J. Broadbent/5052**

**jbroadbent@baaqmd.gov**

*The Board of Directors will consider acceptance of the disclosure of costs resulting from implementation of an optional retirement benefit as required by Government Code Section 7507.*

8. 2007 Update to the Affirmative Action Plan **J. Broadbent/5052**
**jbroadbent@baaqmd.gov**

*Pursuant to Division III, Section 2 of the District's Administrative Code, the Board of Directors affirms its policy to provide equal employment opportunities and commits itself and the Air District to implementing an Affirmative Action Plan (AAP). Attached is an update to the AAP.*

## COMMITTEE REPORTS AND RECOMMENDATIONS

9. Report of the **Budget and Finance Committee** Meeting of July 18, 2007

**CHAIR: C. DALY** **J. Broadbent/5052**
**jbroadbent@baaqmd.gov**

*Action(s): The Committee recommends Board of Directors' approval of the following:*

*A) Addition of 5 positions to staff the Grants Program;*

*B) Authorize the Executive Officer/APCO to solicit bids and execute agreements with consultants to assist staff with audit related activities and a transfer of $900,000 from the General Reserve for this purpose. An adjustment to the Air District's budget will be made accordingly; and*

*C) Establishment of a Designated Reserve for a Cleaner Burning Technology Incentive Program and fund the new Reserve with a transfer of $500,000 from Undesignated Reserves.*

10. Report of the **Mobile Source Committee** Meeting of July 18, 2007

**CHAIR: T. SMITH** **J. Broadbent/5052**
**jbroadbent@baaqmd.gov**

*Action(s): The Committee may recommend Board of Directors' approval of the following:*

*A) Transportation Fund for Clean Air County Program Manager expenditure plans for FY 2007/2008;*

*B) Exchange of $853,354 and $1,070,778 of the FY 2007/2008 TFCA County Program Manager funds of the Alameda and Santa Clara County Program Managers, with Congestion Mitigation and Air Quality (CMAQ) funds; and*

*C) Amend TFCA County Program Manager Expenditure Plans for FY 2005/2006 and FY 2006/2007 for the Contra Costa Transportation Authority.*

*D) Award contract to perform audit of TFCA Regional Fund projects in the amount of $168,600 to the firm of Caporicci and Larson; and*

*E) Authorize the Executive Officer/APCO to enter in to contract with Caporicci and Larson to conduct audits.*

11. Report of the **Climate Protection Committee** Meeting of July 19, 2007

**CHAIR: P. TORLIATT** — **J. Broadbent/5052** jbroadbent@baaqmd.gov

12. Report of the **Legislative Committee** Meeting of July 23, 2007

**CHAIR: B. WAGENKNECHT** — **J. Broadbent/5052** jbroadbent@baaqmd.gov

*Action (s): The Committee may recommend that the Board of Directors approve positions on several newly-introduced air quality bills.*

## PUBLIC HEARING

13. Public Hearing to Consider Proposed Amendments to Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines, and Adoption of CEQA Negative Declaration — **H. Hilken/4642** hhilken@baaqmd.gov

*The proposed amendments to Regulation 9, Rule 8 will fulfill the District's commitment to reduce emissions from stationary IC engines under the Senate Bill 656 Particulate Matter Implementation Schedule and implement potential controls proposed for evaluation in further study measure FS-15 from the Bay Area 2005 Ozone Strategy.*

## CLOSED SESSION

14. Conference with Legal Counsel – ***Existing Litigation***

*Pursuant to Government Code Section 54956.9(a), a need exists to meet in closed session with legal counsel to consider the following cases:*

***Hornblower Cruises and Events v. California Air Resources Board, Bay Area Air Quality Management District, David Burch, et al.,*** *Superior Court of the County of San Francisco, Case No. CGC-07-464286*

## OTHER BUSINESS

15. Report of the Executive Officer/APCO

16. Chairperson's Report

17. Board Members' Comments

*Any member of the Board, or its staff, on his or her own initiative or in response to questions posed by the public, may: ask a question for clarification, make a brief announcement or report on his or her own activities, provide a reference to staff regarding factual information, request staff to report back at a subsequent meeting concerning any matter or take action to direct staff to place a matter of business on a future agenda. (Gov't Code § 54954.2)*

18. Time and Place of Next Meeting - 9:45 a.m., Wednesday, September 5, 2007- 939 Ellis Street, San Francisco, CA 94109

19. Adjournment

**CONTACT CLERK OF THE BOARD - 939 ELLIS STREET SF, CA 94109**

**(415) 749-4965**
**FAX: (415) 928-8560**
**BAAQMD homepage:**
**www.baaqmd.gov**

- To submit written comments on an agenda item in advance of the meeting.
- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.
- To request special accommodations for those persons with disabilities. Notification to the Executive Office should be given at least 3 working days prior to the date of the meeting so that arrangements can be made accordingly.

AGENDA: 1

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Chairperson Ross and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 10, 2007

Re: Board of Directors' Draft Meeting Minutes

RECOMMENDED ACTION:

Approve attached draft minutes of the Board of Directors meeting of June 20, 2007.

DISCUSSION

Attached for your review and approval are the draft minutes of the June 20, 2007 Board of Directors' meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

AGENDA: 1

# BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 ELLIS STREET – SAN FRANCISCO, CA 94109

Draft Minutes: Board of Directors' Regular Meeting – June 20, 2007

## Call To Order

Opening Comments: Chair Mark Ross called the meeting to order at 9:48 a.m.

Roll Call: Present: Mark Ross, Chair, Tom Bates, Harold Brown, Chris Daly, Erin Garner, John Gioia, Scott Haggerty (9:54 a.m.), Jerry Hill, Carol Klatt, Patrick Kwok, Nate Miley, Michael Shimansky, John Silva, Pamela Torliatt, Gayle B. Uilkema, Brad Wagenknecht.

Absent: Dan Dunnigan, Yoriko Kishimoto, Liz Kniss, Janet Lockhart, Jake McGoldrick, Tim Smith.

Pledge of Allegiance: The Board of Directors recited the Pledge of Allegiance.

**Public Comment Period:** The following individual spoke:

Teri Shore
Friends of the Earth

Requesting a letter of support from the Air District's Board of Directors regarding the new Golden Gate high-speed passenger ferry.

## Commendations/Proclamation:

*The Board of Directors recognized employees who have completed milestones of twenty-five (25), thirty (30), and thirty-five (35) years of service with the Air District during the first half of the calendar year with certificates.*

The Board of Directors recognized the following employee who completed 25 years of service with the District: Randall Rattray. The Board of Directors recognized the following employees who completed 30 years of service with the District: Vicki Dvorak and Cynthia Forfang. The Board of Directors recognized the following employees who completed 35 years of service with the District: Janet Glasgow, Nancy Yee, James Tomich, and Toch Mangat.

## Consent Calendar (Items 1 – 3)

1. Minutes of June 6, 2007 Regular Meeting and Final Budget Hearing

2. Communications. Correspondence addressed to the Board of Directors. For information only.

3. District Personnel on Out of State Business Travel

*In accordance with Section 5.4 (b) of the District's Administrative Code, Fiscal Policies and Procedures Section, the Board was notified by memoranda the list of District personnel who traveled on out-of-state business.*

**Board Action:** Director Torliatt moved approval of the Consent Calendar; seconded by Director Wagenknecht; carried unanimously without objection.

**Committee Reports and Recommendations**

4. Report of the Climate Protection Committee Meeting of June 7, 2007

*Action(s): The Committee recommended Board of Directors' approval of the following:*
*A) URS Corporation as the Contractor to Conduct the Phase II Study on Greenhouse Gas Reductions from Stationary Sources; and*
*B) Authorize the Executive Officer/APCO to execute a contract with URS Corporation in an amount not to exceed $95,000.*

Director Torliatt presented the report and stated that the Committee met on Thursday, June 7, 2007. Mr. Mark Strehlow, from URS Corporation provided an overview of the study recently completed for the District, "Opportunities for Further Greenhouse Gas (GHG) Reductions for the BAAQMD Stationary Sources." The Committee received and accepted the report.

The Committee received a report from staff on the Phase II opportunities for GHG reductions from stationary sources and recommends Board of Directors' approval of the following:

1. URS Corporation as the contractor to conduct the Phase II study on GHG reductions from stationary sources ; and
2. Authorize the Executive Officer/APCO to execute a contract with URS Corporation in an amount not to exceed $95,000.

The Committee directed staff to provide more specific detail on the scope of work to be performed by the contractor in Phase II of the study.

The Committee received information on the establishment of a foundation and discussed its potential purposes, activities and steps for creating it. The Committee had questions with regard to the criteria being used to distribute the $3 million grant funds for climate protection programs and requested staff to provide a report at its next meeting.

The next meeting of the Committee will be at the Call of the Chair.

**Board Action:** Director Torliatt moved that the Board of Directors' approve the recommendations and report of the Climate Protection Committee; seconded by Director Kwok; carried unanimously without objection.

5. Report of the Stationary Source Committee Meeting of June 15, 2007

Director Haggerty presented the report and stated that the Committee met on Friday, June 15, 2007. The Committee received a status report on the Flare Minimization Plans required under Regulation 12, Rule 12. The report included an overview of flare operations and a

brief history of the rule; flare emissions at Bay Area refineries; prevention measures; a summary of the public comments received; and the next steps. Several members of the public spoke on this agenda item. The Committee provided direction to staff on several key issues for follow-up at a future meeting.

The Committee received a brief update on steps being taken in response to questions raised at the May 16th public hearing on the proposed new Regulation 6, Rule 2: Commercial Cooking Operations. One member of the public spoke on this agenda item.

The next meeting of the Committee will be at the Call of the Chair.

**Board Action:** Chair Haggerty moved that the Board of Directors' approve the report of the Stationary Source Committee; seconded by Director Wagenknecht; carried unanimously without objection.

**Other Business**

6. Report of the Executive Officer/APCO – Mr. Broadbent announced the following:

   A) The Spare the Air season started June 1st and will end October 12th. To-date, there have been no exceedances of the federal 8-hour standard.
   B) A public hearing will be held at the next Board meeting on Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines.
   C) Peter Hess' retirement will be effective July 18th. Recognition of his efforts in the advancement of air quality during his 33 years of dedicated service to the Air District will be acknowledged at the July 25th Board meeting.

7. Chairperson's Report – Chair Ross stated that he had no report.

8. Board Members' Comments – There were none.

9. Time and Place of Next Meeting –9:45 a.m., Wednesday, July 25, 2007 – 939 Ellis Street, San Francisco, CA 94109

10. Adjournment – The meeting adjourned at 10:17 a.m.

Mary Romaidis
Clerk of the Boards

AGENDA: 2

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Chairperson Ross and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 10, 2007

Re: Board Communications Received from June 20, 2007 through July 24, 2007

RECOMMENDED ACTION:

Receive and file.

DISCUSSION

A list of Communications received by the Air District from June 20, 2007 through July 24, 2007, if any, will be at each Board member's place at the July 25, 2007 Regular Board meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

**BAY AREA AIR QUALITY MANGEMENT DISTRICT**
Memorandum

To: Chairperson, Mark Ross and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 13, 2007

Re: District Personnel on Out-of-State Business Travel

RECOMMENDED ACTION:

Receive and file.

BACKGROUND

In accordance with Section 5.4 (b) of the District's Administrative Code, Fiscal Policies and Procedures Section, the Board is hereby notified that the following District personnel have traveled on out-of-state business.

DISCUSSION

Glen Long, Supervising AQ Engineer, attended a workshop entitled "Don't get caught in the Downwash: how recent modeling changes affect permits and compliance" in Seattle, WA, June 5 – 6, 2007

Jane Lundquist, Principal AQ Engineer, attended a workshop entitled "Don't get caught in the Downwash: how recent modeling changes affect permits and compliance" in Seattle, WA, June 5 – 6, 2007

Peter Hess, Deputy Air Pollution Control Officer, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 22 – 29, 2007

Wayne Kino, AQ Program Manager, attended NACAA Enforcement Workshop in Indianapolis, Indiana June 11 – 13, 2007

Robert Franicevich, Supervising AQ Instrument Specialist, attended 2007 EPA National Quality Assurance Conference in Cleveland OH June 12 – 14, 2007

Dick Duker, MQA Manager, attended EPA AQS Annual Conference in Pittsburgh, PA, June 18 – 22, 2007

Ken Crysler, Meteorologist, attended EPA AQS Annual Conference in Pittsburgh, PA June 18 – 22, 2007

Jean Roggenkamp, Deputy Air Pollution Control Officer, attended CAPCOA Engineering Managers Symposium in Lake Tahoe, NV June 19, 2007

District Out of State Travel
July 13, 2007

John Marvin, Supervising AQ Inspector, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 25 – 29, 2007

Janet Glasgow, AQ Program Manager, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 25 – 29, 2007

Gary Kendall, Technical Services Division Director, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 24 – 28, 2007

Brian Lusher, AQ Engineer, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 25 – 29, 2007

Donny Homer, AQ Engineer, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 25 – 29, 2007

Robert Bornstein, Advisory Council, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 26 – 29, 2007

Sam Altshuler, Advisory Council, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 26 – 29, 2007

Irvin Dawid, Advisory Council, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 26 – 29, 2007

Eric Stevenson, Air Monitoring Manager, attended the NACAA Air Monitoring Steering Committee Meeting in Washington DC June 20 – 22, 2007

Ralph Myers, Building Maintenance Mechanic, attended the UNIV Management Skill / Maintenance Supervisor Seminar in Las Vegas, NV June 24 - 27, 2007

Jack Broadbent, Executive Officer, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 26 – 29, 2007

Brian Bunger, District Counsel, attended the A&WMA Annual Conference and Exhibition in Pittsburgh, PA June 26-29, 2007

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Linda Serdahl
Reviewed by: Jeff McKay

AGENDA: 5

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

TO: Chairperson, Mark Ross and Members of the Board of Directors

FROM: Jack P. Broadbent
Executive Officer/APCO

DATE: July 10, 2007

RE: Quarterly Report of the Executive Office April 1 – June 30, 2007

RECOMMENDED ACTION

This report is provided for information only.

DISCUSSION

Below is summary of meetings held and the status of minutes for the Board of Directors and Advisory Council for the second quarter of 2007. Activities of the Hearing Board is also included:

**Board of Directors**

| Meeting Type | Meeting Date | Status of Minutes |
|---|---|---|
| Regular Meeting | April 4 | Minutes Approved |
| Regular Meeting | May 2 | Minutes Approved |
| Regular Meeting | May 16 | Minutes Approved |
| Regular Meeting | June 6 | Minutes Approved |
| Regular Meeting Final Budget Hearing | June 6 | Minutes Approved |
| Regular Meeting | June 20 | Minutes Completed/Pending Approval |
| Budget & Finance Committee | April 25 | Minutes Completed/Pending Approval |
| Mobile Source Committee | April 25 | Minutes Completed/Pending Approval |
| Legislative Committee | April 23 | Minutes Completed/Pending Approval |
| Stationary Source Committee | April 16 | Minutes Approved |
| Stationary Source Committee | June 15 | Minutes Completed/Pending Approval |
| Climate Protection Committee | May 3 | Minutes Approved |
| Climate Protection Committee | June 7 | Minutes Completed/Pending Approval |
| Executive Committee | April 26 | Minutes Approved |
| Executive Committee | May 30 | Minutes Completed/Pending Approval |
| Public Outreach Committee | May 7 | Minutes Approved |
| Public Outreach Committee | May 21 | Minutes Completed/Pending Approval |
| Ad Hoc Cme. on Port Emissions | April 5 | Minutes Approved |
| Ad Hoc Cme. on Port Emissions | May 17 | Minutes Completed/Pending Approval |

## Advisory Council

| Meeting Type | Meeting Date | Status of Minutes |
|---|---|---|
| Regular Meeting | May 9 | Minutes Approved |
| Executive Committee | May 9 | Minutes Approved |
| Air Quality Planning Committee | April 11 | Minutes Approved |
| Air Quality Planning Committee | June 13 | Minutes Completed/Pending Approval |
| Public Health Committee | June 13 | Minutes Completed/Pending Approval |
| Technical Committee | April 16 | Minutes Completed/Pending Approval |
| Technical Committee | June 11 | Minutes Completed/Pending Approval |

## Hearing Board

1. During the Period April – June 2007, the Hearing Board processed and filed three Applications for Variance, two Emergency Variances, two Appeals and one Accusation and Request for Order for Abatement. The Deputy Clerk attended and took minutes at four hearings and participated in other discussions.

2. A total of $398.47 was collected as excess emission fees during the second quarter of 2007.

3. On May 10, 2007, the Hearing Board reappointed Thomas M. Dailey, M.D., as Chair and Christian Colline, P.E., as Vice-Chair.

4. On May 16-18, 2007, Janet Weiss, M.D., Alternate Member for the Medical Profession category, and the Deputy Clerk of the Boards attended CARB's Advanced Hearing Board Workshop in Ventura, California.

5. On May 30, 2007, Hearing Board Chair Thomas M. Dailey, M.D., presented the Hearing Board Quarterly Report for the period January-March 2007 to the Board Executive Committee.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

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AGENDA: 6

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**
Memorandum

To: Chair Ross and Members
of the Board of Directors

From: Jack Broadbent
Executive Officer/APCO

Date: July 25, 2007

Re: Consider Establishing a New Classification of Organizational Development and Training Specialist with a Salary Set at Pay Range 134

## RECOMMENDATION

Approve establishing the new job classification of Organizational Development and Training Specialist (ODTS) with a salary set at Pay Range 134, effective as of the date of Board of Director approval.

## BACKGROUND

The approved budget for FY 2007-08 includes the addition of a new Human Resources Analyst position that will have primary responsibility for coordination and expansion of training and safety programs. Also, the approved budget includes the deletion of two Deputy Clerk of the Boards positions in the Executive Office; those two positions are in the represented bargaining unit. During discussions with the Employees Association regarding the impacts of the position deletions, it was agreed that the new Human Resources Analyst position would instead be titled Organizational Development and Training Specialist, and that the incumbent Deputy Clerk of the Boards would be moved into the new position so as to avoid being laid-off. There is no job classification titled Organizational Development and Training Specialist currently, which necessitates the creation of a new job classification.

## DISCUSSION

The Human Resources Office has completed discussions with the Employees' Association regarding the job classification description and pay level for this new job classification. In the course of those discussions it was agreed that the new job classification would not include certain duties of a confidential nature, thus allowing it to be in the represented bargaining unit as a further mitigation of the loss of two Deputy Clerk of the Board positions, which had been in the represented bargaining unit. The Board of Directors' approval is required for all new job classifications. In the event that the Board of Directors' decides to not approve creation of the new job classification, then the District and the Employees' Association would reconvene meetings to consider other alternatives to address the impacts of the deletion of the two Deputy Clerk of the Boards positions.

BUDGET CONSIDERATION/FINANCIAL IMPACT

The Human Resources Analyst position that was already approved for the FY 07-08 budget will be allocated to the new job classification of Organizational Development and Training Specialist. Therefore, no new positions will need to be added to the budget as a result of Board approval of the new job classification. However, there is a modest financial impact due to the fact that the salary level for the new job classification is two and one-half percent (2.5%) higher than the journey-level Human Resources Analyst, which amounts to an additional cost of $2,372 annually, including salary driven benefit costs.

Respectfully Submitted,

Jack Broadbent
Executive Officer/APCO

Prepared by: Michael Rich

# ORGANIZATIONAL DEVELOPMENT & TRAINING SPECIALIST

## DEFINITION

Under direction, performs a broad variety of technical and administrative duties in support of District-wide organizational development, training and safety programs; performs related work as assigned.

## DISTINGUISHING CHARACTERISTICS

This is the journey level job class, fully proficient to perform difficult and technical work in such areas as organizational development, training development and coordination, and administration of related District-wide training and safety programs. Incumbents are expected to exercise good judgment in developing, coordinating and administering specific programs and materials and in developing effective recommendations.

## EXAMPLES OF DUTIES (Illustrative Only)

Conducts needs assessments to determine training needs of individual employees and work units, and develops recommendations for District-wide training goals and strategy. Develops and coordinates District-wide training programs in conjunction with internal and external subject matter experts, subject to the approval of management.

Develops training curriculum on a variety of specific topics, working effectively with internal and external subject matter experts as needed to ensure that all materials are up to date, accurate and relevant.

Gathers and assembles materials for training presentations, including workbooks, handouts, Power Point slides, etc. Coordinates and participates in set up of training rooms and facilities, including set up of audio/visual equipment such as laptop computers and computer projectors.

Plans and schedules training and other District-wide events and activities as assigned. Liaisons between external training providers and District staff who request training.

Identifies internal and external training providers to meet specific needs. Assists in developing internal training providers.

Presents training on topics that the incumbent has demonstrated expertise or extensive background in, or in which the incumbent is a subject matter expert.

Arranges for logistical details related to training, such as refreshments for participants.

Develops annual District-wide training budget in coordination with the Human Resources Officer. Monitors training-related expenditures to ensure adequate resources throughout the fiscal year. Coordinates payment of external training and organizational development providers.

Prepares RFPs for training and organizational development projects as needed. Coordinates with FAIS to prepare any necessary contracts with external training and organizational development providers.

Attends meetings with the Human Resources Officer on organizational development matters when assigned. Analyzes organizational dynamics in order to develop recommendations, follow-up and action items for consideration by the Human Resources Officer.

Compiles and maintains District training records to ensure compliance with applicable laws and regulations (e.g., Harassment Prevention Training for Managers and Supervisors, etc.).

May participate in Safety Committee meetings and assist the Safety Officer when so requested by the Human Resources Officer. Participates in safety activities such as safety month, emergency response drills, etc.

When assigned, interviews District staff in order to identify obstacles to effective work performance, analyze causes and develop recommendations for follow-up. May coordinate with outside organizational development consultants on specific activities when assigned by the Human Resources Officer.

Composes reports on training and organizational development topics as needed.

Provides liaison and represents the District with industry, attorneys, the public and other agencies.

## QUALIFICATIONS

### Knowledge of:

Effective communication skills and interpersonal relations.

Theories, principles and practices related to training development and presentation, organizational development, and safety.

Applicable District, state and federal laws, rules and regulations concerning mandatory training and safety programs.

Best practices and methods related to organizational development; working knowledge of basic practices and principles of public sector administration.

Operation of various office equipment, including personal computers and related audio/visual equipment, necessary to perform the duties of the position.

Training curriculum to the extent that the incumbent is presenting training on a particular subject.

Methods of data collection, analysis and record keeping.

### Skill in:

Developing training programs in conjunction with internal and external subject matter experts, and coordinating and administering the programs.

Communicating orally and in writing.

Presenting information orally and in writing to a variety of groups.

Analyzing complex interpersonal dynamics and applying organizational development principles to achieve a desired result.

Preparing and assembling effective instructional materials, reports, correspondence and other written materials.

Developing training curriculum and related materials in conjunction with internal and external subject matter experts.

Developing methods to solicit participation in training courses.

Exercising sound independent judgment within established guidelines.

Working harmoniously and effectively with employees, managers, trainers and facilitators.

Establishing and maintaining effective working relationships with those contacted in the course of the work.

## Other Requirements:

Specified positions must possess a valid California driver's license.

## Education and Experience:

A typical way to obtain the knowledge and skills is:

Organization Development and Training Specialist: Equivalent to graduation from a four year college or university with major coursework in human resources development, organizational development, public administration or a closely related field and three years of journey level experience organizing, designing, developing, and implementing training programs and organizational interventions.

AGENDA: 7

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**
Memorandum

To: Chairperson Mark Ross and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 18, 2007

Re: Disclosure of Costs for Optional Retirement Benefit as Required by Government Code Section 7507

## RECOMMENDATION

Accept this report on the disclosure of costs resulting from implementation of an optional retirement benefit as required by Government Code Section 7507.

## BACKGROUND

The District's contract with the California Public Employees' Retirement System provides for an optional retirement benefit pursuant to Government Code Section 20903. The optional benefit is only utilized in the event of curtailment of or changes in the manner of providing services that are in the best interests of the agency. Government Code Section 7507 in turn requires disclosure of costs resulting from utilization of the optional benefit. Such disclosure must occur at a public meeting of the agency's governing body at least two weeks prior to action by the governing body to effectuate the optional benefit.

## DISCUSSION

The particulars and justifications for utilizing the optional benefit have been discussed with the Board of Directors in closed session.

## BUDGET CONSIDERATION/FINANCIAL IMPACT

The cost of utilizing the optional benefit is $45,103.19.

Respectfully Submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Michael Rich

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**
Memorandum

To: Chairperson Ross and
Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 18, 2007

Re: Update to Affirmative Action Plan

## RECOMMENDATION

Review updated Affirmative Action Plan.

## BACKGROUND

Pursuant to Division III, Section 2 of the District's Administrative Code, the Board of Directors affirms its policy to provide equal employment opportunities and commits itself and the District to implementing an Affirmative Action Plan (AAP). The Human Resources Officer (HRO) reviewed the AAP upon his appointment in July of 2003 and determined that it had not been updated since 1995. This lapse was probably due to passage of Proposition 209 in November of 1996 and subsequent threats of legal action by the Pacific Legal Foundation directed at local government agencies that continued to promulgate affirmative action plans.

Since the passage of Proposition 209 the legality of affirmative action plans has been affirmed so long as the actions prescribed by the plans are narrowly and carefully tailored to remedy past discrimination while not creating quotas or an unfair advantage for minorities and females. The HRO contracted with an expert on affirmative action plan development, Biddle Consulting Group, to assist in preparing an updated, legally viable plan that fulfills the Board's commitment to equal employment opportunities and affirmative action. The HRO and the consultant updated the AAP in 2004 and advised the Executive Committee at the meeting of November 29, 2004. Since then, the AAP has been updated each year.

At the May 30, 2007 Executive Committee Meeting staff provided a status update in response to an inquiry made at the April 25, 2007 Budget & Finance Committee meeting as to whether there are any gender-based differences in compensation for Air District employees. Staff provided a report responding to that request and updated the Committee on the status of the most recent update, advising that the completed update would be placed on the consent calendar for the Board of Directors meeting scheduled for July 18, 2007 (subsequently rescheduled to July 25, 2007).

## DISCUSSION

The updated Affirmative Action Plan is comprised of two parts: 1) a narrative that explains the basis for the plan, its goals, and the roles and responsibilities for staff in administering the plan; and, 2) exhibits with data showing the racial and ethnic breakdown of the District's workforce along with analysis of the availability of minorities and women based

on 2000 census data to determine where women and minorities may be underrepresented in particular job groups. The Plan is updated each year to reflect new hiring data and workforce analysis to determine whether the District is moving toward its goals.

The latest data comparing incumbency to availability indicates that the District has fewer female incumbents relative to the available pool of candidates in 5 out of 8 job groups, and fewer minority incumbents relative to the available pool of candidates in 3 out of 8 job groups. A compensation analysis indicates that females are paid less than males in 3 out of 8 job groups where the difference in pay cannot be attributed to seniority. When compared to last year's AAP update, the new data indicates that the District is making progress relative to placement of females in management positions, and minorities in lower level air quality specialist positions. However, the data relative to female compensation remains largely unchanged.

A complete copy of the Affirmative Action Plan, including detailed reports, is available from staff upon request.

BUDGET CONSIDERATION/FINANCIAL IMPACT

There is no fiscal impact beyond what has already been contemplated and approved in the current budget.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Michael K. Rich

AGENDA: 9

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Mark Ross and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 16,, 2007

Re: Report of the Budget & Finance Committee Meeting of July 18, 2007

## RECOMMENDED ACTION

The Committee recommends Board of Directors approval of the following:

*A) Addition of 5 positions to staff the Grants Program;*

*B) Authorize the Executive Officer/APCO to solicit bids and execute agreements with consultants to assist staff with audit related activities and a transfer $900,000 from the General Reserve for this purpose. An adjustment to the Air District's budget will be made accordingly; and*

*C) Establishment of a Designated Reserve for a Cleaner Burning Technology Incentive Program and fund the new Reserve with a transfer of $500,000 from Undesignated Reserves.*

## BACKGROUND

The Budget & Finance Committee met on Wednesday, July 18, 2007. The Committee received the following reports and recommendations:

- Targeted Reserve Allocation Staff Recommendation;
- Request for 3 Additional FTE's for Program 307 Grants;
- Status Report on Carl Moyer Audits and Interim Resource Funding Request; and
- Establishment of Designated Reserves and Transfer of Funds for a Cleaner Burning Technology Incentive Program.

Attached are the staff reports presented to the Budget and Finance Committee.

Chairperson Chris Daly will give an oral report of the meeting.

## BUDGET CONSIDERATION/FINANCIAL IMPACT:

Staff recommendation for 5 additional positions has a financial impact of approximately $600,000 annually. The cost will be mitigated by the elimination of 1 management position in the Finance, Administration, and Information Systems Division upon the expected retirement of one manager later this year, resulting in an annual savings of approximately $113,232. Funding for the new positions in the current fiscal year will be covered by the management of current personnel vacancy salary savings.

BUDGET CONSIDERATION/FINANCIAL IMPACT CONTINUED :

The modified staff recommendation to authorize the Executive Officer/APCO to solicit bids and execute agreements to assist staff to carry out the functions of the Carl Moyer program in an amount not to exceed $900,000 will be transferred from the General Reserve and an adjustment of the Air District's FY 2007/2008 will be made accordingly.

Staff recommendation to establish a Designated Reserve with a transfer of funds for a Cleaner Burning Technology Incentive Program from the Undesignated Reserves is requested in an amount not to exceed $500,000.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Mary Ann Goodley

AGENDA: 4

**BAY AREA AIR QUALITY MANGEMENT DISTRICT**
Memorandum

To: Chairperson Daly and Members
of the Budget and Finance Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2007

Re: Targeted Reserve Allocation Recommendation

RECOMMENDED ACTION:

Receive and file.

BACKGROUND

The Air District reserves have improved since FY 2000, and are now in the range recommended by the Government Financial Officer's Association's (GFOA). The Committee has requested that staff review reserve targets at similar organizations, and to provide a recommendation for reserve targets at the Air District.

DISCUSSION

The Air District has reviewed Reserve practices at local cities and counties. A survey of other Air Districts was also conducted. Based on staff's review, the GFOA's recommendation of 15% in undesignated reserves is a common minimum target throughout the organizations surveyed. In addition, most organizations maintain a minimum target for designated funds used for one time expenditures.

Staff will present a recommendation to the Committee for a minimum undesignated reserve of 15% and will also discuss minimum targets for designated funds. Finally, staff will provide recommended processes in the event of Reserves falling below the targeted minimums.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Linda Serdahl
Reviewed by: Jeff McKay

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**
Memorandum

To: Chairperson Daly and Members
of the Budget & Finance Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 12, 2007

Re: Addition of Three Positions for the Grants Program

RECOMMENDATION:

Recommend Board of Directors approval of the addition of three new positions to staff the Grants Program.

BACKGROUND

Pursuant to a series of audits of the Air District's Grants Program, it has become apparent that staffing needs to be increased in order to ensure that the Grants Program is administered properly and in accordance with applicable guidelines and requirements. The amount of money that is administered through the Grants Program has increased dramatically over the past four years resulting in increased workload associated with the Grants Program. Indeed, one of the recommendations from the audits is to increase the staff level in the Grants Program in acknowledgment of the volume of grant funds being administered.

DISCUSSION

Staff recommends the addition of 1 Air Quality Program Manager to manage the Grants Program. Currently, an Assistant Counsel from the Legal Division manages the Grants Program in an acting capacity. The Assistant Counsel is a Manager and can assist the Grants Program for a limited time, but it is necessary to create a new position to manage the Program permanently.

Staff also recommends the addition of 2 Administrative Analyst positions to coordinate and handle administrative functions of the Grants Program. The positions would coordinate with the Finance section to ensure proper project and program accounting as well as compliance with statutory and regulatory program requirements. The addition of the 2 positions will enable the Program's project staff to re-focus on the core grant work, including evaluation of grant applications, emission calculations and field compliance monitoring. Providing additional staffing will also allow for a broader distribution of the core workload, which has increased significantly with the increased grant funding received by the Air District.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

The cost of adding the 3 positions is approximately $347,137 annually. The cost will be mitigated somewhat by the elimination of 1 management position in the Finance, Administration, and Information Systems Division upon the expected retirement of one manager later this year, resulting in an annual savings of approximately $113,232. Funding for the new positions in the current fiscal year will be covered by the management of current personnel vacancy salary savings.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Michael K. Rich

**BAY AREA AIR QUALITY MANGEMENT DISTRICT**
Memorandum

To: Chairperson Daly and Members
of the Budget and Finance Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2007

Re: Status of Carl Moyer Program Audit Reports and Interim Resource Funding

RECOMMENDED ACTION:

Consider recommending Board of Directors' approval to authorize the Executive Officer/APCO to solicit bids and execute agreements to assist staff to carry out the functions of the Carl Moyer Program and transfer $900,000 from the General Reserve for this purpose and adjust the Air Districts' FY 2007/08 budget accordingly.

BACKGROUND

In March of 2006, Senator Dean Florez requested that the Bureau of State Audits (BSA) conduct a performance audit on management of programs that administer State Carl Moyer Program funding. The request was directed towards programs implemented by the Air Resources Board (ARB) and four Air Districts: the South Coast Air Quality Management District, the San Joaquin Air Pollution Control District, the Sacramento Metropolitan Air Quality Management District and the Bay Area Air Quality Management District. The request indicated three areas of focus: the efficiency and equity of the application process, the effectiveness of project selection and funding distribution in emission reduction and public health protection, and the availability and quality of public information and public outreach to ensure participation.

Following the request from Senator Florez, the ARB announced that it would also perform project audits of the Carl Moyer Program at the four Air Districts (the first audit in the nine year history of the program). The ARB also requested that the Department of Finance (DOF) conduct the financial portion of the ARB audit. The BSA and ARB audits occurred simultaneously.

DISCUSSION

Staff will present the Air District's plan of action in response to the audits. Plans include remediation of past project files, implementation of new controls, reallocation of matching funds, acceleration of Moyer processes, and review of outreach.

A key element of the audit findings is the need to increase staffing to better manage the number of grants and the amount of grant funds distributed. Accordingly, staff has presented a request for increased staffing. However, the current requirement for improved controls for ongoing grant projects, and the simultaneous requirement for remediation of prior grant awards drive a

need for interim resources. These resources will be deployed in a variety of tasks related to the audits of the Carl Moyer Program as will be described by staff.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

If approved, $900,000 will be transferred from the General Reserve for this purpose and an adjustment of the Air District's FY 2007/08 budget, will be made accordingly. Funds for this work will be budgeted not to exceed $900,000.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Daly and Members
of the Budget and Finance Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 18, 2007

Re: Request to Establish a Designated Reserve and to Transfer Funds for a Cleaner Burning Technology Incentives Program

## RECOMMENDED ACTION:

Consider recommending that the Board of Directors designate a Reserve for a Cleaner Burning Technology Incentives Program and fund the new Reserve with a transfer of $500,000 from Undesignated Reserves.

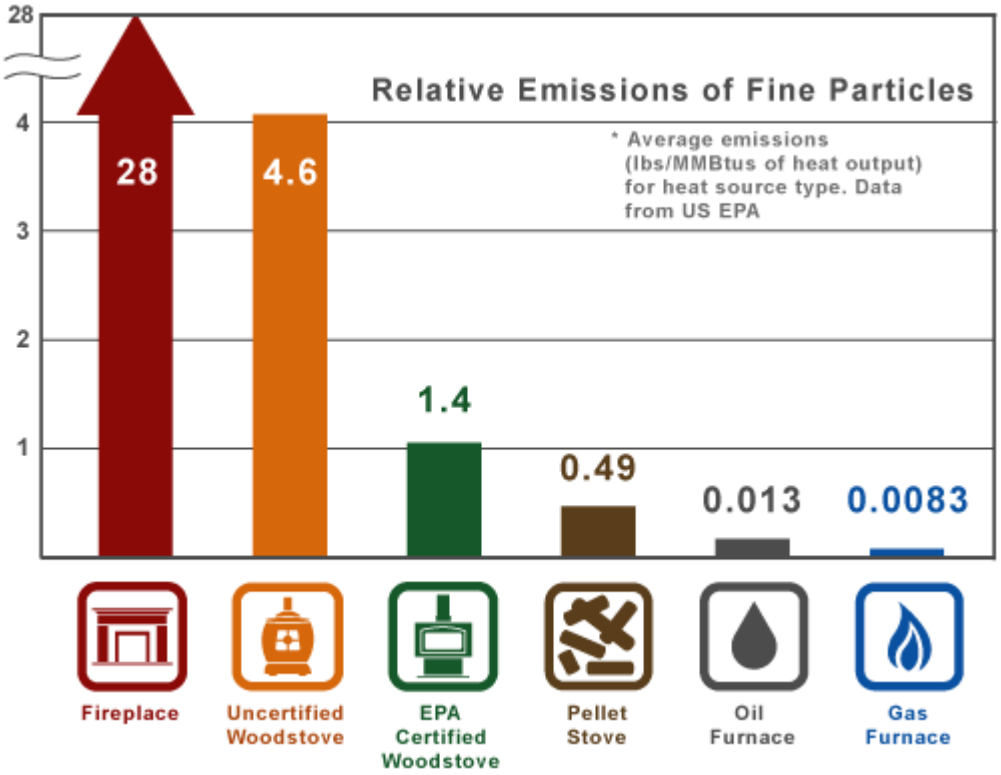
## BACKGROUND

Wood smoke generated from 1.1 million homes in the Bay Area is a large source of fine particulate matter ($PM_{2.5}$). Air District research indicates that fine particulate matter from wood smoke comprises upward of 30% of the peak $PM_{2.5}$ levels during the winter months of November through February. As the Air District will be non-attainment for the 24-hour $PM_{2.5}$ National Ambient Air Quality Standard, reductions in wood smoke emissions will be necessary to achieve clean air in the San Francisco Bay Area. A regulation will be considered later this year to require mandatory curtailment of wood burning when the District predicts exceedances of the 24-hour $PM_{2.5}$ National Ambient Air Quality Standard. In order to obtain additional wood smoke reductions on an ongoing basis, Air District staff is proposing a financial incentive program to encourage the replacement of high emitting fireplaces and old wood stoves with more modern, EPA certified devices and natural gas fueled devices.

## DISCUSSION

Cleaner burning technology promoted through a "Wood Stove Change-out" program will provide Bay Area residents with financial incentives ranging from $100 to $600 to upgrade their current wood burning devices and fireplaces. Conventional fireplaces and uncertified wood stoves emit significantly more $PM_{2.5}$ than low emission EPA certified devices and natural gas fired devices and pellet stoves. (See Figure 1.)

**Figure 1: Comparison of PM2.5 Emission Rates**




In order to reduce wood smoke $PM_{2.5}$ emissions in the Bay Area, the Air District is proposing a financial incentive program to encourage the change-out of dirty technology for newer, low emission technology. Staff has examined $PM_{2.5}$ emissions rates, energy efficiency, green house gas impacts, and random telephone survey results[1] as factors in setting the incentive amounts. The amounts shown in Table 2 are to convert from either a conventional fireplace or an old, non-EPA certified wood burning device to a cleaner burning technology.

**Table 2: Cleaner Burning Technology Incentive Amounts**

| Device | Incentive | Emissions |
|---|---|---|
| Nat Gas Log Set | $100 | Very Good |
| EPA Certified Wood Stove or Insert | $300 | Good |
| Nat Gas Stove or Insert | $500 | Very Good |
| Pellet Stove or Insert | $600 | Fair |

[1] Random telephone survey results for 2006 & 2007 indicated that 22% of the respondents would be willing to voluntary upgrade to a cleaner wood burning device if a $500.00 incentive were offered.

The initial incentive amounts listed in Table 2 were developed based on other similar incentive programs in California and the Air Districts' own, limited change-out programs. Amounts may need to be adjusted in the future in order to stimulate demand on the part of the public.

Interested members of the public will submit an application to the Air District to pre-approve the incentive amount. The pre-approved incentive will be encumbered through a voucher process and will be available to members of the public that purchase a product through retailers or to "do-it-yourself" applicants. Additional financial incentives may be available from retailers that belong to the Hearth Products and Barbeque Association (HPBA). The Air District has been working in close coordination with HPBA to offer the best incentive program possible to the residents of the Bay Area. Following verification that the conversion was completed and the old device was destroyed, a check to the applicant will be sent out for the pre-approved incentive amount. The program will begin this winter with incentives offered to the public in January 2008.

BUDGET CONSIDERATION

Staff will present the recommended Reserve transfer and its effect on Air District Reserve funds. The transfer will have no budget impact.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Eric Pop
Reviewed by: Jeffery McKay and Kelly Wee

AGENDA: 10

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Mark Ross and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 16, 2007

Re: Report of the Mobile Source Committee Meeting of July 18, 2007

## RECOMMENDED ACTIONS

*The Committee recommends Board of Directors' approval of the following items:*

*A) Approval of Transportation Fund for Clean Air (TFCA) County Program Manager Expenditure plans for FY 2007/2008 and certain prior year;*

*B) Exchange of $853,354 and $1,070,778 of the FY 2007/2008 TFCA County Program Manager funds of the Alameda and Santa Clara County Program Managers, with Congestion Mitigation and Air Quality (CMAQ) funds;*

*C) Approval of amendment to TFCA County Program Manager Expenditure Plans for FY 2005/2006 and FY 2006/2007 for the Contra Costa Transportation Authority;*

D) *Award contract to perform audit of TFCA Regional Fund projects in the amount of $168,600 to the firm of Caporicci and Larson; and*

*E) Authorize the Executive Officer/APCO to enter in to contract with Caporicci and Larson to conduct audits.*

## DISCUSSION

The Mobile Source Committee met on Wednesday, July 18, 2007.

The Committee considered the following items:

A) Proposed Transportation Fund for Clean Air (TFCA) Program Manager Expenditure Plans for FY 2007/2008 and certain prior years;

B) Selection of Auditor for TFCA Regional Fund Projects; and

C) Status of Carl Moyer Program Audit Reports,

Chairperson Tim Smith will give a summary of the meeting. The attached staff reports were presented to the Committee.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None. Revenues for the Transportation Fund for Clean Air Program are generated from a dedicated outside funding source and distributed throughout the counties. TFCA allocations do not impact the Air District's general fund or operating budget. Funding for the TFCA audits is included in the FY 2007/2008 budget.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Mary Ann Goodley

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Office Memorandum

To: Chairperson Smith and
Members of the Mobile Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2007

Re: Transportation Fund for Clean Air County Program Manager Expenditure Plans: Fiscal Year 2007/2008, and Certain Prior Fiscal Years

## RECOMMENDED ACTION

Consider recommending Board of Directors approval of staff recommendations on:

- the fiscal year (FY) 2007/2008 Transportation Fund for Clean Air (TFCA) County Program Manager projects listed on the attached Table 1;
- the exchange of $853,354 and $1,070,778 of the FY 2007/2008 TFCA County Program Manager funds of the Alameda and Santa Clara County Program Managers, respectively, with Congestion Mitigation and Air Quality (CMAQ) funds; and
- the amendment to TFCA County Program Manager Expenditure Plans for FY 2005/2006 and FY 2006/2007 for Contra Costa Transportation Authority.

## BACKGROUND

Pursuant to California Health and Safety Code (HSC) Sections 44241 and 44242, the Air District Board of Directors has imposed a $4 per vehicle annual surcharge on all motor vehicles registered within the boundaries of the Air District[a]. The revenues fund the implementation of transportation control measures and mobile source control measures. By law, the Air District applies forty percent of the revenues generated by this surcharge to the TFCA Program Manager Fund. Each county has a designated County Program Manager that submits to the Air District an annual expenditure plan of projects in its county that it recommends for funding. If a Program Manager has not allocated its share of the Fund within six months of the date of the Air District Board of Directors' approval of the expenditure plan, then the Air District must allocate the unallocated funds. Air District staff has reviewed the TFCA County Program Manager expenditure plans submitted for FY 2007/2008, as discussed below.

[a] Revenues from an additional $2 surcharge in motor vehicle registrations, authorized by Assembly Bill 923, are not part of TFCA. These revenues are directed to the Air District's Mobile Source Incentive Fund (MSIF) to provide incentives for the implementation of additional mobile source projects.

Pursuant to Board approval, the Air District enters into funding agreements with each of the Program Managers. Projects are implemented as set forth in the expenditure plans.

## DISCUSSION

### Project Evaluation

To determine eligibility, Air District staff evaluated the projects in the TFCA County Program Manager expenditure plans for compliance with the following requirements:

1. *Consistency with State Law:* the projects shall be consistent with one of the eligible project categories listed in HSC Section 44241.
2. *Consistency with the Ozone Strategy:* pursuant to HSC Sections 40233, 40717, and 40719 the projects shall be consistent with the appropriate transportation control measures or mobile source measures contained in the Ozone Strategy.
3. *Reduction of Emissions from Motor Vehicles:* pursuant to HSC Section 44220(b), the projects shall reduce emissions from motor vehicles.
4. *Consistency with Board-Adopted Policies:* the projects shall be consistent with policies adopted by the Air District Board of Directors.

### TFCA Cost Effectiveness

Pursuant to policies adopted by the Air District Board of Directors, individual projects included in the annual expenditure plans for County Program Manager funds must achieve a TFCA cost-effectiveness of equal to or less than $90,000 per ton (TFCA dollars per weighted ton[b] of emissions reduced over the life of the project). Only TFCA County Program Manager administrative costs and light-duty vehicle projects are excluded from the calculation of TFCA cost-effectiveness.

### Project List

The County Program Managers submitted a total of 51 projects for consideration. Three projects were withdrawn by mutual agreement of the Air District and respective County Program Manager and one project was ineligible, as discussed in the next section. Staff recommends the approval of the remaining 47 projects.

Summary information for all of the projects in the FY 2007/2008 TFCA County Program Manager expenditure plans is provided in Table 1 (attached). Table 1 lists the project sponsor, the project description, years of effectiveness, the TFCA funds requested, the TFCA cost-effectiveness, and staff's recommended action for the Air District Board of Directors. The Napa County Program Manager does not have an expenditure plan at this time because the sole project originally submitted to the Air District for consideration was withdrawn by mutual agreement. The Program Manager has indicated that a new expenditure plan will be submitted by October 15, 2007.

[b] Consistent with California Air Resources Board guidelines for the Carl Moyer Program, for the purposes of cost effectiveness, emission reductions equal the sum of reactive organic gases, oxides of nitrogen, and particulate matter (PM) eliminated, with the exhaust portion of PM weighted by a factor of 20.

Additionally, the Alameda and Santa Clara County Program Managers proposed the exchange of $853,354 and $1,070,778, respectively, of their available TFCA funds with CMAQ funds. The Metropolitan Transportation Commission (MTC), through its Clean Air in Motion program, committed CMAQ funds for the Air District's Vehicle Buy Back (VBB) Program. However, according to the Federal Highway Administration, which administers the CMAQ funds, vehicle buy back programs are not eligible for CMAQ funding. MTC worked with the Air District and the TFCA Program Managers to exchange funding so that the Air District can use the TFCA Program Manager funds to augment the VBB Program, and the TFCA Program Managers receive CMAQ funding from MTC to implement CMAQ-eligible projects locally. Upon approval of this exchange, Air District staff will propose an amendment to the Air District's FY2007/2008 budget to incorporate this exchange.

Table 2 lists the total amount of TFCA County Program Manager funds available to each county and the amount the Air District staff recommends for allocation. The total funds available for allocation represents the sum of projected calendar year 2007 Department of Motor Vehicles (DMV) receipts, interest earned on TFCA funds in calendar year 2006, and funds available for reprogramming from prior-year projects that were canceled or completed under budget. As required by a policy adopted by the Air District Board of Directors, all projects recommended for funding, including the exchange of funds, comply with the $90,000-per-ton TFCA threshold cost-effectiveness on an individual basis, as calculated by Air District staff.

Table 2 also provides a breakdown of TFCA County Program Manager funds by county and project type. Most of the TFCA Program Manager funds are requested for ridesharing programs (36.4%), bicycle projects (20.9%), and shuttle services (14.5%). The remaining funds are requested for other eligible project categories. Program administration costs are less than the maximum of five percent of new FY 2007/2008 revenues in each county, as required by the TFCA enabling legislation.

Multiple County Program Managers have unallocated funds subject to the six-month allocation requirement, which is shown in Table 2. In order to ensure that there is sufficient time for the Air District staff to review proposed replacement projects and the Air District to approve those projects that are eligible, Air District staff has set a date of October 15, 2007 for the County Program Managers' submittal of proposed projects.

Withdrawn/Ineligible Projects

Three projects were withdrawn based on mutual agreement between the respective Program Manager and Air District staff. In each case, the project was ineligible because it did not meet the cost-effectiveness requirement set by TFCA Policy #2. These projects are summarized in the table below.

| Program Manager County | Project Sponsor | Project Title |
|---|---|---|
| Contra Costa | City of Lafayette | Lamorinda School Bus Program |
| Napa | Napa County Transportation Planning Agency | VINE Route 10 |
| San Mateo | City of Menlo Park | Mid-day shuttle |

In addition, one project was considered ineligible. The Santa Clara County Program Manager submitted an application for an upgrade and expansion of the San Jose International Airport's compressed natural gas (CNG) fueling station. Vehicle infrastructure projects are no longer eligible for TFCA funding, except in the case of advanced technology demonstration projects. The FY 2007/2008 TFCA Program Manager policies (adopted by the Board of Directors on January 17, 2007) no longer allow funding for clean air vehicle infrastructure projects, which were also exempt from the cost-effectiveness criterion. The proposed project is clearly a vehicle infrastructure project. Staff does not consider the expansion of a CNG fueling facility to be an advanced technology project, and therefore the project does not meet the exception stated above. Staff notes also that, in general, infrastructure projects cannot demonstrate definite tailpipe emission reductions.

Regarding existing expenditure plans, one Program Manager, the Contra Costa Transportation Authority (CCTA), has requested an amendment of the FY 2005/2006 and FY 2006/2007 expenditure plans in order to allocate $60,000 of unexpended funds from four projects in those plans to an existing project in the FY 2006/2007 expenditure plan. Specifically, (a) two projects from CCTA's FY 2005/2006 Expenditure Plan have a total of $43,300 in funds available and (b) two projects from CCTA's FY 2006/2007 Expenditure Plan have a total of $16,700 in funds available. CCTA has requested that these unexpended funds be reprogrammed to the countywide transit incentive program (06CC07) in its FY 2006/2007 expenditure plan. The recent closure of the connector structure in the MacArthur Maze in Oakland caused by the gasoline tanker collision and fire initiated an opportunity to encourage a shift from single occupant vehicle use to BART and other transit options. After the closure, the project sponsor of CCTA's transit incentive program (511 CC) was inundated with requests to join the program, far exceeding original projections of demand. The reallocation of funds to 06CC07 would be used entirely for incentives. A summary of the proposed reallocations is provided in the table below.

| Project Number | Project Title | Funds | | Notes |
|---|---|---|---|---|
| | | *to be shifted* | *to be re-programmed* | |
| 05CC04 | South County Employer Network | ($35,000) | | Several components were deferred |
| 05CC13 | Bay Trail Gap Closure Bicycle Lane Striping and Signage Project | ($8,300) | | Project came in at a lower cost than expected |
| 06CC01 | West Contra Costa Employer Based Trip Reduction (EBTR) Program | ($6,700) | | Postage funds were over-prescribed in this line item |
| 06CC04 | West Contra Costa Bicycle Rack Program | ($10,000) | | Defer bicycle map and guide |
| 06CC07 | Countywide Transit Incentive Program | | $60,000 | Provide for additional transit incentives |

BUDGET CONSIDERATION/FINANCIAL IMPACT

None. Approval of the recommended projects will have no impact on the Air District's budget. TFCA revenues are generated from a dedicated outside funding source and passed through to counties. TFCA allocations do not impact the Air District's general fund or operating budget.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: David Wiley
Reviewed by: Jack M. Colbourn

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **ALAMEDA COUNTY** | | | | | | |
| 07ALA00 | Alameda County CMA | Program Manager costs to administer TFCA funds within the County. | | $53,307 | NA | Approve |
| 07ALA01 | City of Alameda | Coordinate six existing signals along Constitution Way and Lincoln Avenue, between Marina Village Parkway and Grand Street. | 2 | $100,000 | $33,036 | Approve |
| 07ALA02 | City of Alameda | Purchase 16 electronic bike lockers for a parking structure under construction in the Park Street Business District. | 10 | $32,000 | $71,236 | Approve |
| 07ALA03 | County of Alameda | Construct Class II bicycle lanes along Wente Street between Marina Avenue and Concannon Blvd, approximately 2500 feet. | 15 | $150,000 | $89,508 | Approve |
| 07ALA04 | City of Fremont | Coordinate 24 traffic signals along four interlinked arterials in central Fremont: Fremont Blvd (Mowery to Stevenson); Stevenson Blvd (Farwell to Liberty); Mowery Ave (Farwell to Hastings); and Blacow Rd (Mowery to Stevenson). | 2 | $101,000 | $19,795 | Approve |
| 07ALA05 | City of Hayward | Construct a combination of Class III bicycle routes, Class II bicycle lanes, and shared roadway markings on streets at various locations in the City of Hayward. | 15 | $95,400 | $63,378 | Approve |
| 07ALA06 | BART | Install 116 electronic bicycle lockers at BART stations around Alameda County. | 10 | $275,405 | $57,252 | Approve |
| 07ALA07 | Alameda County CMA | Provide a guaranteed ride home program for individuals employed within Alameda County who use an alternative commute mode. | 2 | $270,000 | $16,591 | Approve |
| 07ALA08 | Livermore Amador Valley Transit Authority | Operate shuttles between all four ACE trains, Pleasanton employment centers, and the Dublin/Pleasanton BART station. | 1 | $36,883 | $39,989 | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **CONTRA COSTA COUNTY** | | | | | | |
| 07CC00 | Contra Costa Transportation Authority | Program Manager costs to administer TFCA funds within the County. | | $68,029 | NA | Approve |
| 07CC01 | West Contra Costa Transportation Advisory Committee | Provide financial incentives to increase transit ridership among West County residents, students, and commuters in the I-80 corridor in Contra Costa County. Includes transit tickets, informational materials, and transit promotions. | 1 | $156,500 | $41,372 | Approve |
| 07CC02 | West Contra Costa Transportation Advisory Committee | Provide comprehensive trip reduction services to employers at worksites in western Contra Costa County. Project will provide information and incentives, hold workshops and transportation fairs, and promote carpools and vanpools. | 1 | $54,230 | $20,265 | Approve |
| 07CC03 | West Contra Costa Transportation Advisory Committee | Provide up to six taxi or rental car vouchers per year to registered participants working in Contra Costa County who regularly use alternative commute modes. | 1 | $127,018 | $42,031 | Approve |
| 07CC04 | Transportation Partnership and Cooperation (TRANSPAC)/City of Pleasant Hill | Provide comprehensive trip reduction services to employers at worksites in Central and Eastern Contra Costa County, including providing information and workshops, developing a ridematch database, and promoting carpools, vanpools and bicycling. | 1 | $110,000 | $25,428 | Approve |
| 07CC05 | Transportation Partnership and Cooperation (TRANSPAC)/City of Pleasant Hill | Provide financial incentives to encourage residents, students, and employees in Contra Costa County to use carpools and transit. Includes carpool and tranit incentive programs, a Carpool to BART project, a SchoolPool program, and rideshare campaigns. | 1 | $682,248 | $32,511 | Approve |
| 07CC06 | City of San Ramon | Provide incentives to promote vanpool formation throughout Contra Costa County. Incentives include: 50% of vanpool expenses for first three months for new vanpool passengers and incentives for drivers who recruit at least six new riders for a year. | 1 | $83,275 | $24,350 | Approve |
| 07CC07 | City of San Ramon | Provide comprehensive trip reduction services to employers at worksites in southern Contra Costa County. Project will provide mailings and hold transportation fairs, workshops and presentations. | 1 | $84,156 | $43,249 | Approve |
| 07CC08 | City of San Ramon | Provide two 12-ride transit passes to 1200 students throughout the southwest areas of Contra Costa County, to be mailed out with transit schedules prior to start of school year. Develop a ride-matching service for Stanley Middle School in Lafayette. | 1 | $92,482 | $30,560 | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **MARIN COUNTY** | | | | | | |
| 07MAR00 | Transportation Authority of Marin | Program Manager costs to administer TFCA funds within the County. | | $18,152 | NA | Approve |
| 07MAR01 | Transportation Authority of Marin | Construct a Class I north-south bicycle path (3 miles) on the west side of Highway 101 that connects to an existing bikepath at Los Ranchitos Road and the nearby San Rafael Transit facility near Mission Avenue. | 20 | $520,000 | $89,450 | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **SAN FRANCISCO COUNTY** | | | | | | |
| 07SF00 | San Francisco County Transportation Authority | Program Manager costs to administer TFCA funds within the County. | | $36,588 | NA | Approve |
| 07SF01 | BART | Operate the Embarcadero Bikestation, a 150-space high-security bicycle parking facility located in the Embarcadero BART station. | 1 | $17,535 | $33,774 | Approve |
| 07SF02 | City College of San Francisco | Provide expanded bicycle parking for the City College of San Francisco (CCSF) John Adams, Ocean, and Mission campuses by installing 270 new bicycle racks and, at the Mission Campus, a bicycle security enclosure. | 10 | $80,067 | $44,516 | Approve |
| 07SF03 | County of San Francisco | Purchase 50 bicycles and helmets to continue the implementation of the City of San Francisco's Fleet Bicycle Program. Bicycles will be used by city gardeners in the Department of Parks & Recreation. | 5 | $31,500 | $38,940 | Approve |
| 07SF04 | County of San Francisco | Provide a city-wide Commuter Benefits Program targeted at both San Francisco businesses and City and County of San Francisco departments. | 1 | $130,000 | $35,973 | Approve |
| 07SF05 | County of San Francisco | Purchase 15 bicycles to expand the Department of Parking and Traffic Enforcement Bicycle Program. | 5 | $30,408 | $35,664 | Approve |
| 07SF06 | County of San Francisco | Defray the incremental costs for 20 light-duty vehicles--five hybrid-electric vehicles, and 15 compressed natural gas vehicles. | NA | $73,500 | NA | Approve |
| 07SF07 | County of San Francisco | Defray the incremental costs for 22 light-duty vehicles--10 hybrid-electric vehicles, and 12 compressed natural gas vehicles. | NA | $71,400 | NA | Approve |
| 07SF08 | Golden Gate Bridge, Highway and Transportation District | Purchase six police bicycles and helmets to be used in lieu of patrol cars to conduct security patrol of the 1.7-mile Golden Gate Bridge, day and night, seven days a week. | 5 | $9,380 | $26,790 | Approve |
| 07SF9 | County of San Francisco | Construct five gateway pedestrian islands at intersections in the Bayview-Hunters Point neighborhood of San Francisco. | 20 | $33,500 | $56,881 | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **SAN FRANCISCO COUNTY (Continued)** | | | | | | |
| 07SF10 | County of San Francisco | Construct a pedestrian refuge island at the intersection of Diamond Heights Boulevard between Berkeley Way and Duncan Street. | 20 | $58,000 | $31,457 | Approve |
| 07SF11 | County of San Francisco | Construct a pedestrian refuge island at three intersections: 8th Avenue and Judah Street; 8th Avenue and Kirkham Street; and Warren Drive and Locksley Avenue. | 20 | $131,000 | $26,114 | Approve |
| 07SF12 | County of San Francisco | Design and implement a westbound Class II bicycle lane (0.11 miles) on Otis Street between Gough Street and South Van Ness Avenue. | 15 | $11,500 | $10,225 | Approve |
| 07SF13 | San Francisco International Airport | Defray the incremental costs for 24 dedicated compressed natural gas light-duty vehicles to operate as airport van shuttles between San Francisco International Airport and San Francisco County. | NA | $96,000 | NA | Approve |
| 07SF14 | University of California San Francisco | Construct a secure electronic card access bicycle parking facility at Sutter and Divisidero for UCSF hospital staff. The facility will accommodate 20 secure bicycle parking spaces. | 10 | $14,443 | $85,738 | Approve |
| 07SF15 | County of San Francisco | Facilitate the purchase of 33 new CARB-certified compressed natural gas taxicabs. | NA | $132,000 | NA | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **SAN MATEO COUNTY** | | | | | | |
| 07SM00 | San Mateo C/CAG | Program Manager costs to administer TFCA funds within the County. | | $49,099 | NA | Approve |
| 07SM02 | Pensinsula Traffic Congestion Relief Alliance | County-wide incentive program to reduce single-occupancy vehicle commuting. Includes employer and commuter outreach, incentive programs, and a guaranteed ride home program. | 1 | $412,000 | $6,937 | Approve |
| 07SM03 | SamTrans | Operate nine peak-commute shuttle routes between BART stations and major employers in the county. | 1 | $576,000 | $38,234 | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **SANTA CLARA COUNTY** | | | | | | |
| 07SC00 | Santa Clara Valley Transportation Authority | Program Manager costs to administer TFCA funds within the County. | | $51,979 | NA | Approve |
| 07SC01 | San Jose International Airport | Convert existing taxis and vans to compressed natural gas as part of San Jose International Airport's Alternative Fuel Vehicle Program for its permitted ground transportation operators. | NA | $79,709 | NA | Approve |
| 07SC03 | City of Sunnyvale | Provide pedestrian improvements and increase bus and light-rail ridership as part of Tasman/FairOaks streetscape project. | 20 | $296,260 | $43,439 | Approve |
| 07SC04 | City of Mountain View | Construct a bike/pedestrian overpass across US 101 and extend the Permanente Creek Trail 0.5 miles south to Old Middlefield Way. | 20 | $100,000 | $68,808 | Approve |
| 07SC05 | County of Santa Clara | Develop and implement weekend signal timing plans for 55 signalized intersections over 25.7 miles on the Almaden, Capitol and San Tomas Expressways. | 2 | $135,000 | $7,949 | Approve |
| 07SC06 | Santa Clara Valley Transportation Authority | Continue and expand light rail shuttle services from Santa Clara Valley Transportation Authority light rail stations to employment destinations. | 1 | $383,000 | $89,851 | Approve |
| 07SC08 | City of Morgan Hill | Extend existing Class I Llagas Creek Trail 4000 feet, from La Crosse to Watsonville Road in the City of Morgan Hill. | 20 | $48,101 | $51,192 | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **SOLANO COUNTY** | | | | | | |
| 07SOL00 | Solano Transportation Authority | Program Manager costs to administer TFCA funds within the County. | | $16,272 | NA | Approve |
| 07SOL01 | City of Benicia | Retrofit seven Benicia Breeze Transit buses with Level-3 diesel PM/NOx diesel emission control devices. | 5 | $10,000 | $272 | Approve |
| 07SOL02 | City of Fairfield | Purchase and install thirteen bicycle racks on thirteen Fairfield/Suisun Transit buses. | 10 | $13,120 | $71,893 | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 1: TFCA County Program Manager
# FY07/08 Project List

| Project Number | Sponsor | Project Description | Yrs Eff | TFCA Funding Requested | TFCA$ Cost-Effectiveness Per Ton (1) | Action |
|---|---|---|---|---|---|---|
| **SONOMA COUNTY** | | | | | | |
| 07SON00 | Sonoma County Transportation Authority | Program Manager costs to administer TFCA funds within the County. | | $27,174 | NA | Approve |
| 07SON01 | Sonoma County Transit | Support Sonoma Transit's marketing program, including the “The Clean Air Alternative” and “Try Transit" promotions. | 1 | $158,609 | $70,224 | Approve |
| 07SON02 | City of Santa Rosa | Provide incentives to commuters who take public transit, walk, carpool, or bicycle to work; and support the guaranteed ride home program. | 1 | $144,901 | $85,615 | Approve |
| 07SON03 | City of Santa Rosa | Student/Youth monthly transit pass subsidy. | 1 | $88,000 | $40,849 | Approve |
| 07SON04 | City of Petaluma | Public outreach & education on alternative transportation, public transit and bicycling options; and installation of bicycle parking at transit stops. | 2 | $143,528 | $87,867 | Approve |
| 07SON05 | Town of Windsor | Remove existing lane markings and restripe a 0.56-mile segment of Old Redwood Highway to create a Class II bicycle lane. | 15 | $79,964 | $84,375 | Approve |

Notes:
(1) TFCA$ per ton = TFCA$ divided by the estimated lifetime emission reductions (ozone precursors and weighted particulate matter) for the project. NA = not applicable. Emission reductions are not attributed to administration, clean air vehicle fueling infrastructure and light-duty clean air vehicles.

# Table 2: TFCA County Program Manager
# FY2006/07 Projects by County and Project Type

| | Alameda | Contra Costa | Marin | San Francisco | San Mateo | Santa Clara | Solano | Sonoma | Grand Total | Percent |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Available TFCA Funds *** | **$1,967,349** | **$1,457,938** | **$720,315** | **$956,821** | **$1,078,099** | **$2,691,511** | **$348,887** | **$642,176** | **$9,863,096** | |
| Program Administration | $53,307 | $68,029 | $18,152 | $36,588 | $49,099 | $51,979 | $16,272 | $27,174 | $320,600 | 4.7% |
| Trip Reduction/Ridesharing | $270,000 | $1,389,909 | $0 | $201,288 | $412,000 | $0 | $0 | $232,901 | $2,506,098 | 36.4% |
| Bicycle Projects | $552,805 | $0 | $520,000 | $123,545 | $0 | $148,101 | $13,120 | $79,964 | $1,437,535 | 20.9% |
| Arterial Management | $201,000 | $0 | $0 | $0 | $0 | $135,000 | $0 | $0 | $336,000 | 4.9% |
| Shuttle/Feeder Bus Service | $36,883 | $0 | $0 | $0 | $576,000 | $383,000 | $0 | $0 | $995,883 | 14.5% |
| Clean Fuel Buses | $0 | $0 | $0 | $96,000 | $0 | $0 | $0 | $0 | $96,000 | 1.4% |
| Low Emission Light Duty Vehicles | $0 | $0 | $0 | $276,900 | $0 | $79,709 | $0 | $0 | $356,609 | 5.2% |
| Transit Information/Telecommuting | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $302,137 | $302,137 | 4.4% |
| Smart Growth | $0 | $0 | $0 | $222,500 | $0 | $296,260 | $0 | $0 | $518,760 | 7.5% |
| Diesel Repowers/Retrofits | $0 | $0 | $0 | $0 | $0 | $0 | $10,000 | $0 | $10,000 | 0.1% |
| **Total Allocated Funds**** | $1,113,995 | $1,457,938 | $538,152 | $956,821 | $1,037,099 | $1,094,049 | $39,392 | $642,176 | **$6,879,622** | 100.0% |
| **Unallocated Funds** | $0 | $0 | $182,163 | $0 | $41,000 | $526,684 | $309,495 | $0 | | |

* The total funds available for programming represents the sum of projected calendar year 2007 DMV receipts, interest earned on TFCA funds in calendar year 2006, and funds available for reprogramming from prior year projects that were canceled or completed under budget.

** Total Allocated Funds do not include $853,354 from Alameda County and $1,070,778 from Santa Clara County allocated to the Vehicle Buy Back Program through an exchange of TFCA and CMAQ funds.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Smith and
Members of the Mobile Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2007

Re: Selection of Auditor for Transportation Fund for Clean Air (TFCA) Regional Fund Projects

## RECOMMENDED ACTION

Consider recommending Board of Directors approval of:

1) the selection of Caporicci and Larson to conduct fiscal audits of TFCA Regional Fund projects; and

2) the authorization for the Executive Officer to execute a contract with Caporicci and Larson to conduct fiscal audit services, the contract for which shall conform with the policies and requirements of the Air District and shall not exceed $168,600.

## BACKGROUND

Health and Safety Code Section 44242 requires that the Air District perform a fiscal audit on all projects funded with motor vehicle registration fee surcharges and sets forth the audit guidelines. The Air District must have an independent auditor selected by the Air District conduct the fiscal audits at least once every two years. The Air District has conducted nine previous TFCA fiscal audits. In April, 2007, the Air District commenced the process for the tenth audit, which will cover 192 TFCA Regional Fund projects that either have been completed since the last audit of Regional Fund projects conducted in 2005 or are still underway. TFCA's (FY) 2007/2008 budget includes funds to conduct this audit. If approved by the Board of Directors, the selected contractor will begin work in August 2007, with an expected date of completion and submission of all reports by December 2007. The Air District's staff's evaluation of the audit proposals and recommended selection is presented below.

## DISCUSSION

### Request for Proposals

On April 20, 2007, the Air District issued a Request for Proposals (RFP) to perform the tenth audit of projects funded by the TFCA program. The Air District mailed the RFP to 61 public accounting firms and posted it on the Air District's website. The deadline to submit proposals was 4:00 p.m., May 21, 2007. The procedures used for the RFP comply with the Air District's Administrative Code Division II, Section 4.6, and with applicable portions of the California Public Contract Code Section 1100 et seq.

The Air District received four proposals by the deadline:

| **Company Name** | **Office Location** |
|---|---|
| Caporicci & Larson | Oakland |
| Izabal Bernaciak and Company | San Francisco |
| Macias, Gini & Company | Oakland |
| Vargas and Company | San Jose |

Each of the firms has conducted a TFCA fiscal or Air District annual audit previously.

**Evaluation of Proposals**

Air District staff confirmed that all of the proposals satisfied the requirements of the RFP.

A panel, comprising a division manager, a purchasing agent and a technical representative from the TFCA program, conducted the evaluation and scoring of the proposals. The panel relied on the RFP's listed five criteria to evaluate and score the proposals. These scores were averaged to determine the selected audit firm. The table below shows each firm's score for each criterion. The team also took the quality of the firms' past audits for the Air District into consideration.

**Scoring of Proposals**

| CRITERIA | MAX. PTS. | IZABAL, BERNACIAK & COMPANY | CAPORICCI & LARSON | VARGAS AND COMPANY | MACIAS, GINI & O'CONNELL |
|---|---|---|---|---|---|
| 1. Technical expertise; size/structure of firm as affecting ability to perform and complete work in a professional and timely manner | 30 | 22 | 26 | 23 | 21 |
| 2. Past experience of the firm and, in particular, experience of the audit team on projects of similar scope for governmental agencies | 20 | 19 | 18 | 14 | 16 |
| 3. Responsiveness of the proposal, stating a clear understanding of the work to be performed | 20 | 17 | 18 | 13 | 13 |
| 4. Proposed cost | 20 | 14 | 19 | 17 | 11 |
| 5. Green/Local Business | 10 | 5 | 5 | 5 | 10 |
| **Total** | **100** | **77** | **86** | **73** | **70** |

**Caporicci & Larson (Total Bid Cost: $168,600)**

Caporicci & Larson received a total score of 86. The firm ranked first in technical skills and ability to complete the services required for the TFCA Regional Fund audit. The firm's proposal was succinct and responsive and demonstrated an understanding of the work to be performed. In the past, Caporicci & Larson conducted the Air District's annual financial audit and performed well. Caporicci & Larson submitted the lowest cost proposal.

**Vargas and Company (Total Bid Cost: $192,000)**

Vargas and Company received a total score of 73 points. The firm placed second in technical expertise and ability to perform the duties required for the TFCA Regional Fund fiscal audit. Although this firm is qualified to perform the tasks required for the TFCA audits, the Vargas proposal was less responsive to the proposal criteria than other proposals. The proposal did not demonstrate a clear understanding of the work to be performed, evidenced in part by the inclusion of the TFCA Program Manager Fund program in the proposal for an audit of the Regional Fund. This firm conducted the Air District's first two rounds of TFCA financial audits and performed those audits satisfactorily. Vargas & Company submitted the second lowest bid.

**Izabal, Bernaciak & Company (Total Bid Cost: $300,420)**

Izabal, Bernaciak & Company received a total score of 77. The proposal showed an understanding of the financial and compliance audit services to be performed and placed third in ability to perform the work required for the TFCA Regional Fund audit. Izabal, Bernaciak & Company performed the TFCA Regional Fund financial audits in 2003 and was very efficient in the auditing of the TFCA projects. However, the firm lacked the expertise to prepare clearly written reports, requirement of the RFP. Izabal, Bernaciak & Company submitted the third lowest bid.

**Macias, Gini & O'Connell (Total Bid Cost: $482,548)**

Macias, Gini & O'Connell received a total score of 70. The firm placed fourth in technical expertise and ability to perform and complete the audit work in a timely manner. While the firm has the experience necessary to perform the tasks required for the TFCA audit, its proposal did not score as high in the responsiveness to proposal and past experience criteria. The firm's proposal demonstrated that the firm could not perform the audit services within the timeframe required by the RFP schedule. The RFP imposed a four month deadline to complete the audit. Macias, Gini & O'Connell specified an eight-month timeframe to complete the audit. Macias, Gini & O'Connell also conducted the last TFCA audit and performed poorly in a number of key areas, including the length of time taken to complete the audit. Macias, Gini & Company submitted the highest cost proposal.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None. Resources for this audit are included in the Air District's FY 2007/2008 budget. The selection of Caporicci and Larson is contingent on the execution of a contract for these audit services that conforms to the policies and requirements of the Air District.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Andrea Gordon
Reviewed by: Jack M. Colbourn

need for interim resources. These resources will be deployed in a variety of tasks related to the audits of the Carl Moyer Program as will be described by staff.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

If approved, $900,000 will be transferred from the General Reserve for this purpose and an adjustment of the Air District's FY 2007/08 budget, will be made accordingly. Funds for this work will be budgeted not to exceed $900,000.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay

**BAY AREA AIR QUALITY MANGEMENT DISTRICT**
Memorandum

To: Chairperson Smith and Members
of the Mobile Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2007

Re: Status of Carl Moyer Program Audit Reports

RECOMMENDED ACTION:

Receive and file.

BACKGROUND

In March of 2006, Senator Dean Florez requested that the Bureau of State Audits (BSA) conduct a performance audit on management of programs designated to distribute Carl Moyer Program funding. The request was directed towards funding from four Districts: the South Coast Air Quality Management District, the San Joaquin Air Pollution Control District, the Sacramento Metropolitan Air Quality Management District and the Bay Area Air Quality Management District. The request indicated three areas of focus: the efficiency and equity of the application process, the effectiveness of project selection and funding distribution in emission reduction and public health protection, and the availability and quality of public information and public outreach to ensure participation.

Following the request from Senator Florez, the Air Resources Board (ARB) announced that they would also perform a project audit (the first audit in the nine year history of the program). The ARB also requested that the Department of Finance (DOF) conduct a separate audit, resulting in three simultaneous audits.

DISCUSSION

Staff will present an update on the status of the audits and on the District plan of action in response to the audits.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay

AGENDA: 11

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Mark Ross and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 16, 2007

Re: Report of the Climate Protection Committee Meeting of July 19, 2007

## RECOMMENDED ACTIONS

None.

## DISCUSSION

The Climate Protection Committee will meet on Thursday, July 19, 2007. The Committee will receive the following reports:

1) Status Report on Air District Climate Protection Activities;
2) Status Report on Air District Climate Protection Public Outreach Activities; and
3) Discussion of Climate Protection Incentive Program.

Attached are the staff reports presented in the Climate Protection Committee packet.

Chairperson, Pamela Torliatt will provide an oral report of the meeting.

## BUDGET CONSIDERATION/FINANCIAL IMPACTS

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Mary Ann Goodley

AGENDA: 4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Torliatt and Members of the Climate Protection Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 9, 2007

Re: Status Report on District Climate Protection Activities

## RECOMMENDED ACTION:

None. For information only.

## BACKGROUND

The Air District initiated its Climate Protection Program just over two years ago, on June 1, 2005. One of the first major accomplishments of the program was a successful regional summit on climate protection. Through ongoing staff efforts, as well as collaboration with summit participants, the Air District has established valuable regional climate protection partnerships and continues to be a leader in climate protection activity in the Bay Area. The Air District has continued to build its climate protection program, with focus on regional partnerships, technical assistance to cities and counties, outreach and education, incentive funding and stationary source technology evaluation.

## DISCUSSION

Staff will present to the Committee an overview of the Air District's Climate Protection activities which include:

- GHG Emission Inventory
- $3M Climate Protection Incentive Program
- Regional Partnership Building
  - Collaboration with Joint Policy Committee
  - Local Government Assistance Workgroup
  - AB 32 Tracking and participation
- Technical Assistance to Local Governments
  - Workshop Series
  - Data facilitation
  - Web Portal
- Outreach and Education
  - $4^{th}$-$5^{th}$ grade Climate Protection Curriculum

    - Exploring outreach partnership with Flex Your Power and SF Department of the Environment
    - Developing Radio Ad series
    - Youth Summit
    - Integrating climate protection message into existing outreach programs, including Spare the Air, collateral material, and the high school Clean Air Challenge curriculum.
- Stationary Source Technology Evaluation
- Integration into Air District Practices
    - CEQA Guidelines update & Comments
    - Rulemaking
    - GHG criteria in grant programs
- Carbon neutral as of June 1, 2007

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Ana Sandoval
Reviewed by: Henry Hilken

AGENDA: 5

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Torliatt and Members of the Climate Protection Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 2, 2007

Re: Status Report on Climate Protection Public Outreach Activities

RECOMMENDED ACTION:

None.

BACKGROUND

As part of the June 1, 2005, resolution that established a Bay Area Climate Protection Leadership Program, the Air District made a commitment to build public awareness about climate change and climate protection through its outreach and education activities. Since the resolution was adopted, staff has actively integrated climate protection messages into the Air District's ongoing outreach programs and worked to develop a public awareness campaign specifically focused on climate protection.

DISCUSSION

The Air District's climate protection outreach strategy is designed to educate the public about climate change and inform them how they can reduce greenhouse gas emissions. The campaign offers the public simple clean air tips that can be incorporated into their everyday lives. Staff will report on existing and new climate protection outreach activities including:

- Community partnerships and special events;
- Youth outreach;
- Media relations;
- Collateral materials; and
- Advertising campaign.

BUDGET CONSIDERATION / FINANCIAL IMPACT:

Staff time necessary to integrate climate protection messages into the Air District's Spare the Air program is included in existing staff resources. Additional funds for a Senior Public Information Officer dedicated to climate protection outreach as well as resources for climate change educational activities were included in the FY 2007/08 budget.

Respectfully submitted,

Jack P. Broadbent
Executive Director/APCO

Prepared by: Karen M. Schkolnick
Reviewed by: Jack M. Colbourn

AGENDA: 6

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Torliatt and Members
of the Climate Protection Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 9, 2007

Re: Discussion of Climate Protection Grant Program Criteria

RECOMMENDED ACTION:

None.

BACKGROUND

On November 1, 2006, the Air District Board of Directors approved the establishment of a $3,000,000 climate protection incentive program to fund greenhouse gas emission reduction activities in the Bay Area. This program was announced at the November 10, 2006 Climate Protection Summit.

DISCUSSION

During the past four months, Air District staff has met with representatives from a wide variety of stakeholder groups, including local governments, community organizations, youth organizations, and business associations, to solicit input on funding needs, emerging initiatives, and potential new activities, in order to inform the development of the Climate Protection Incentive Program. Staff has also researched and compared different types of grant program structures, from both government and private foundation programs.

In addition, staff has conducted an assessment of the breadth and level of climate activity currently underway in the Bay Area and the funding sources for those activities, in order to identify and focus the range of projects that might be eligible for funding, and to ensure that the Air District does not duplicate funding efforts currently underway.

Staff will provide the Committee with an overview of the possible structure, objectives and guidelines for the Climate Protection Grant Program and other possible programs for the incentive funds.

BUDGET CONSIDERATION / FINANCIAL IMPACT:

A $3,000,000 transfer from Reserve for Radio Replacement to fund this incentive program was approved by the Board of Directors on November 1, 2006.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Abby Young
Reviewed by: Henry Hilken

AGENDA: 12

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 12, 2007

Re: Report of the Legislative Committee Meeting of July 23, 2007

## RECOMMENDED ACTIONS

The Committee may recommend that the Board of Directors approve positions on several newly-introduced air quality bills.

## DISCUSSION

The Legislative Committee will meet on Monday, July 23, 2007. The Committee will receive the following reports:

A) Discussion on the concepts of Solar Empowerment and Green Power requirements;
B) Consideration of new bills agency positions; and
C) Update on bills for which the Air District has previously adopted positions.

Attached are the staff reports presented in the Legislative Committee packet

Committee Vice-Chair Erin Garner will give an oral report of the meeting.

## BUDGET CONSIDERATION/FINANCIAL IMPACTS

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

AGENDA: 4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Brad Wagenknecht and
Members of the Legislative Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2007

Re: Discussion on Solar Empowerment and Green Power Requirements

RECOMMENDED ACTION:

Discuss issues of 'solar empowerment' and ways to encourage or require 'green power' elements into new construction.

DISCUSSION

Staff have met and had discussions with experts in the field of solar electric issues and will be prepared to answer questions from the Committee on this issue.

Staff will also present information on different ideas regarding green power and are prepared to answer questions from the Committee on this issue about prior legislative or regulatory efforts to mandate different technologies.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

No direct impact.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Thomas Addison
Reviewed by: Jean Roggenkamp

AGENDA: 5

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Brad Wagenknecht and
Members of the Legislative Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2007

Re: Consideration of New Bills

RECOMMENDED ACTION:

Discuss recently-introduced bills of air quality significance, and potentially recommend positions on some.

DISCUSSION

A number of bills of air quality significance have been introduced since the Committee last met, and several other measures will likely be introduced in the next several weeks. While the formal bill introduction deadline this year was February 23rd, new bills can and do continue to emerge through rule waivers or through the gut-and-amend process.

The recent firing and resignation of the Air Resources Board (ARB) Chair and Executive Officer have been the subject of extensive press coverage, as well as a legislative hearing. Staff believe that possible bills will address at a minimum the issues of term appointments versus pleasure appointments, ex parte communications from the Governor's office and the Legislature, and whether the appointments are to be made solely by the Governor, or whether the Assembly Speaker and Senate President Pro Tempore will share appointing authority. It is also possible that the existence or number of air district representatives on ARB will be addressed. Staff will update the Committee on any such emerging bills, and receive potential direction from the Committee on the issue.

**AB 1610** is a recent bill introduced by Assembly Speaker Fabian Nunez (D- Los Angeles). It would establish a new California Petroleum Refineries Facilities Standards Board. In essence, the purpose of the Board would be to ensure that refineries are not manipulating the price of fuel (and thus inflating their profits) by limiting output through unnecessary maintenance or downtime. This Board could require air districts to inspect the records and data of refineries' maintenance and downtime "if the inspection is reasonably related to the public interest of the people of California." Air districts would also be put in charge of auditing and inspecting refineries for compliance with the regulations and requirements of this new Board. The bill does not provide funding for these new responsibilities. Perhaps more significantly, it would give districts a new and different role to play at refineries. A copy of the legislation is attached.

**AB 118** is also a recent bill authored by Speaker Nunez. Generally, its purpose is to help achieve AB 32's goals by reducing the carbon content of transportation fuels and increasing the alternative fuel vehicles on the road. Through a variety of fees, the bill creates two programs: the Air Quality Improvement Program and Fund, and the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program and Fund. The first would be administered by the ARB in partnership with the California Energy Commission (CEC), and the second would be administered by the CEC in partnership with the ARB. The programs would

receive tens of millions of dollars annually from diverse sources. Through 2016, the current Smog Abatement Fee would increase from $12 to $20. (This fee is paid by cars less than seven years old in lieu of smog inspections.) $30 million of funds from the Williams Energy Settlement with California would be directed to the second program, as would $6.5 million from the Motor Vehicle Account and $5 million annually from the Public Interest Research, Development, and Demonstration Fund (which comes from utility ratepayers). Finally, through 2016, existing fees for vehicle registrations, drivers licenses, boat registrations, and certain off-road registrations including cemetery equipment would be increased. The District strongly supported last year's AB 32, and staff believe AB 118 is certainly well-intended. However, staff note that the bill neither mentions nor includes a role for air districts. Furthermore, the relation of these new programs to the well-established and successful Carl Moyer program is not discussed nor clear. The new programs allow for and presumably would fund the retrofitting of older dirtier engines with newer, cleaner engines, including alternative fuel engines, as well as allowing funding for research and development of new technologies and fuels. Thus at a minimum there appears to be potential overlap with a variety of existing funding programs that are already established. A copy of the bill is attached for the Committee's consideration.

**AB 1470** is authored by Assemblymember Jared Huffman (D-San Rafael), and is titled the Solar Water Heating and Efficiency Act of 2007. Essentially, it establishes a $250 million program with higher natural gas rates to subsidize the installation of solar hot water systems. The goal would be to have an additional 200,000 new systems installed by 2017. Solar hot water systems use the sun to heat water, and thus reduce but not eliminate the amount of natural gas households use to heat water. Thus, the technology, which is available and durable, cuts emissions of greenhouse gases, as well as traditional air pollutants. A number of studies cite solar hot water as having the most potential to reduce residential gas consumption. Last year the State established the California Solar Initiative, a $3.3 billion program wherein higher electric rates subsidize the installation of solar electric systems. However, the Initiative does not address solar thermal systems, since programs to cut natural gas use cannot be subsidized by electric ratepayers. Some opponents to AB 1470 argue that unlike solar electric, solar thermal systems are already cost-effective, and thus should not be subsidized. Opponents also argue that prior solar hot water subsidy programs primarily increased the cost of the systems, and did not reduce costs to consumers. Despite these arguments, staff recommend supporting this bill. A copy of the measure is attached.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

No direct impact.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Thomas Addison
Reviewed by: Jean Roggenkamp

AMENDED IN SENATE JULY 5, 2007

AMENDED IN ASSEMBLY JUNE 6, 2007

AMENDED IN ASSEMBLY JUNE 4, 2007

CALIFORNIA LEGISLATURE—2007–08 REGULAR SESSION

# ASSEMBLY BILL No. 1610

**Introduced by Assembly Members Nunez and Eng**

February 23, 2007

An act to add Chapter 9 (commencing with Section 3890) to Division 3 of the Public Resources Code, *relating to fuels*.

LEGISLATIVE COUNSEL'S DIGEST

AB 1610, as amended, Nunez. California Petroleum Refinery Facilities Standards Board.

(1) Existing law establishes the State Energy Resources Conservation and Development Commission (Energy Commission) in the Resources Agency, and specifies the powers and duties of the commission with respect to energy resources in the state. Existing law requires major oil producers, refiners, major marketers, major oil transporters, and major oil storers to supply to the commission weekly, monthly, and annually certain designated information regarding petroleum supplies.

This bill would create the California Petroleum Refinery Facilities ~~Standards~~ Board, and would require an owner or operator of a petroleum refinery facility in the state to submit information to the board relating to the capacity and operational status of the facility. The board would be authorized to direct local air pollution control districts and air quality management districts to inspect petroleum refinery facilities ~~in the state~~ *within their districts*. By imposing new duties on these local air districts, the bill would impose a state-mandated local program.

The bill would require the board to produce supply and demand forecasts for petroleum.

The bill would authorize the Energy Commission to request a petroleum refinery facility in the state to voluntarily adjust or delay a scheduled major maintenance.

The bill would subject violations of its provisions to specified civil and criminal penalties, thereby imposing a state-mandated local program by creating a new crime.

(2) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that with regard to certain mandates no reimbursement is required by this act for a specified reason.

With regard to any other mandates, this bill would provide that, if the Commission on State Mandates determines that the bill contains costs so mandated by the state, reimbursement for those costs shall be made pursuant to the statutory provisions noted above.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

*The people of the State of California do enact as follows:*

SECTION 1. Chapter 9 (commencing with Section 3890) is added to Division 3 of the Public Resources Code, to read:

## Chapter 9. Refinery Facilities

3890. (a) The California Petroleum Refinery Facilities ~~Standards~~ Board is hereby created to implement the requirements of this chapter.

(b) The board shall consist of seven members: ~~the Attorney General; the Controller;~~ *a member of the Occupational Safety and Health Standards Board; a member of the State Water Resources Control Board;* a member of the State Energy Resources Conservation and Development Commission; a member of the State Air Resources Board; a member of an air pollution control or air quality management district board, to be selected by the Senate *Committee on Rules*; a technical person appointed by the Governor and approved by the Senate; and a public person selected by the Speaker of the Assembly. *The board shall appoint from*

*among its membership a chairperson and organize itself to adopt rules and procedures to conduct the business of the board, including, but not limited to, meeting times and locations.* The board shall be supported by a reasonable number of staff members.

(c) The board shall provide on a quarterly basis an opportunity for public comment.

(d) The board shall report in writing to the appropriate policy committees of the Legislature on a quarterly basis on its progress in implementing this chapter. The report shall include, but need not be limited to, information concerning refinery downtime scheduling and coordination, and wholesale price fluctuations.

*(e) The board, upon appropriation by the Legislature, shall expend funds from the Energy Resources Programs Account for administrative costs of the board.*

~~(e)~~

*(f)* As used in this chapter "board" means the California Petroleum Refinery Facilities ~~Standards~~ Board.

~~(f)~~

*(g)* As used in this chapter "downtime" means any period of inoperation of the facility that reduces its normal capacity to refine petroleum.

3891. An owner or operator of a petroleum refinery facility in the state shall report to the board all of the following:

(a) On a monthly basis, whether and to what extent, during the preceding month, a facility was down or operating at reduced capacity and the reasons therefore. This accounting shall reflect the actual downtime at each facility. The report shall include all of the following:

(1) Reasons for each unscheduled downtime at each refinery.

(2) Amount of product lost due to downtime.

(3) Actions taken by the refinery and its parent company to minimize disruption to the market or price swings due to downtime.

(4) Reasons for scheduled maintenance that took longer than scheduled.

(5) Information on the type of each scheduled project at each refinery.

(b) On a daily basis, the operational status of each facility.

(c) On March 1 of each year, information regarding scheduled major maintenance for the next 12 months and projections for the next three years.

3892. (a) The board shall maintain records of petroleum refinery facility downtime and shall provide these records to the State Energy Resources Conservation and Development Commission on a daily basis.

(b) The board may direct air pollution control districts and air quality management districts *with a petroleum refinery facility within their districts* to inspect the records, data, accounts, books, or documents of a petroleum refinery facility, if the inspection is reasonably related to the public interest of the people of California.

*(c) The board shall not create a mandatory schedule for inspections.*

3893. (a) Information submitted to the board pursuant to this chapter shall be held in confidence by the board and ~~aggregated to the extent necessary to ensure confidentiality, if public disclosure of the specific information or data to the public would result in unfair competitive disadvantage to the owner or operator that submitted that information.~~

~~(b) If the board receives a request to publicly disclose unaggregated information, or otherwise proposes to publicly disclose information, notice of the request or proposal shall be provided to the owner or operator that submitted that information.~~

~~(c) The board shall issue a written decision that sets forth its reasons for making the determination whether each item of information for which a claim of confidentiality is made shall remain confidential or shall be publicly disclosed.~~

~~(d) Information submitted to the board shall not be deemed confidential if the owner or operator that submitted the information has made it public.~~ *is subject to the same requirements in Section 25364.*

3894. The board shall review all relevant state and federal laws, including, but not limited to, Division of Occupational Safety and Health regulations, State Air Resources Board regulations, and regional water quality control board regulations, and air pollution control and air quality management district regulations, as they pertain to petroleum refinery facilities, and prepare a report to the Legislature by January 1, 2009, identifying the laws and regulations that may be in conflict.

3895. (a) Air pollution control and air quality management districts shall audit and inspect petroleum refinery facilities ~~in the state~~ *within their district* that fail to comply with procedures,

criteria, standards, or protocols established by the board to implement the requirements of this chapter.

(b) Air pollution control and air quality management districts are vested with the ability to investigate any petroleum refinery facility ~~in the state~~ *within their district* without notice. The districts are vested with the ability to investigate to ensure that the interests of California's citizens and consumers are served, protected, and represented in relation to the availability of gasoline.

3896. (a) The board shall by January 1, 2009, and every ~~three~~ *two* years thereafter, produce a supply and demand forecast for petroleum for the next three years.

(b) The board shall by January 1, 2009, and every six years thereafter, produce a supply and demand forecast for petroleum for the next ten years.

3897. (a) The State Energy Resources Conservation and Development Commission may request a petroleum refinery facility in the state to voluntarily adjust or delay a scheduled major maintenance, if the maintenance is not a regulatory compliance, reliability, or safety repair.

(b) The refinery shall respond in writing within ~~24 hours~~ *one week* if the refinery denies the request and explain the grounds for the refusal.

*(c) The commission shall notify the board of any request made to a refinery pursuant to subdivision (a), and shall notify the board regarding the outcome of the request when the outcome becomes known to the commission.*

3898. (a) The board shall notify any person who has failed to timely provide the information required by this chapter. If, within five days after being notified of the failure to provide the information, the person fails to supply the information, the person shall be subject to a civil penalty of not less than five hundred dollars ($500), but not more than two thousand dollars ($2,000) per day for each day the submission of information is refused or delayed, unless the person has timely filed objections with the board regarding the information and the board has not yet held a hearing on the matter.

(b) Any person who violates any provision of this chapter is guilty of a misdemeanor punishable by imprisonment in the county jail for a period not to exceed one year, or by a fine of not more

than ten thousand dollars ($10,000), or by both that fine and imprisonment.

(c) Any person who willfully makes any false statement, representation, or certification in any record, report, plan, or other document submitted to the board pursuant to this chapter shall be subject to a civil penalty not to exceed two thousand dollars ($2,000).

(d) The board, in consultation with the air pollution control districts *with a petroleum refinery facility within their districts* and air quality management districts, may adopt additional penalties applicable to any person or entity who is in violation of any provision of this chapter.

(e) The board may seek an injunction from a court of competent jurisdiction to require compliance with the requirements of this chapter. This subdivision shall not limit any authority of the commission or air pollution control districts or air quality management districts to seek injunctions within their jurisdictions.

(f) The remedies and penalties provided by this section are cumulative to each other.

(g) For the purposes of this section, "person" shall mean the responsible corporate officer.

3899. Nothing in this chapter shall result in the modification, delay, or abrogation of any deadline, standard, rule, or regulation adopted by a federal, state, or local agency for the purposes of protecting public health or the environment, including, but not limited to, any requirements imposed by the State Air Resources Board or by an air pollution control district or an air quality management district.

SEC. 2. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution for certain costs that may be incurred by a local agency or school district because, in that regard, this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

However, if the Commission on State Mandates determines that this act contains other costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made

pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

O

**AB 1610 Support:**
California Professional Firefighters
California Small Business Association
Consumers for Auto Reliability and Safety

**AB 1610 Oppose:**
Western States Petroleum Association

AMENDED IN SENATE JUNE 26, 2007

AMENDED IN ASSEMBLY JUNE 1, 2007

AMENDED IN ASSEMBLY APRIL 17, 2007

AMENDED IN ASSEMBLY MARCH 29, 2007

CALIFORNIA LEGISLATURE—2007–08 REGULAR SESSION

# ASSEMBLY BILL No. 118

**Introduced by Assembly Member Nunez**

January 9, 2007

An act to amend Section 16428.3 of the Government Code, to amend, repeal, and add Section 44060 of, and to add Chapter 8.9 (commencing with Section 44270) to Part 5 of Division 26 of, the Health and Safety Code, to add Section 25620.16 to the Public Resources Code, and to amend, repeal, and add Sections 9250, 9261, 9853, 14900, and 14900.1 of the Vehicle Code, relating to fuels.

## LEGISLATIVE COUNSEL'S DIGEST

AB 118, as amended, Nunez. Alternative fuels and vehicle technologies: funding programs.

Existing law imposes various limitations on emissions of air contaminants for the control of air pollution from vehicular and nonvehicular sources. Existing law generally designates the State Air Resources Board as the state agency with the primary responsibility for the control of vehicular air pollution. Under existing law, the state board, in conjunction with other state agencies, is required to develop and adopt a state plan to increase the use of alternative fuels, as defined.

This bill would create the Air Quality Improvement Program, to be administered by the state board, to fund air quality improvement

projects, upon appropriation by the Legislature, relating to fuel and vehicle technologies. The bill would create the Air Quality Improvement Fund, and would require the state board to expend the moneys in that fund, upon appropriation by the Legislature, for eligible air quality improvement projects and programs.

The bill would also create the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program, to be administered by the State Energy Resources Conservation and Development Commission, to provide, upon appropriation by the Legislature, grants and revolving loans to public agencies, California-based businesses *and projects*, public-private partnerships, vehicle and technology consortia, *fleet owners, consumers*, and academic institutions to develop innovative technologies that transform California's fuel and vehicle types. The commission *and the state board* would be required to establish an advisory body to develop investment strategies to help implement this program. *The commission, in coordination with the state board and the advisory body, would be required to established funding criteria and priorities and to review those criteria and priorities annually.*

The bill would create the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund (Alternative Fund), and would require the commission to expend the moneys in the Alternative Fund, upon appropriation by the Legislature, for eligible projects under the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program. The bill would transfer to the Alternative Fund specified settlement funds in the amount of $30,000,000, and would also transfer *to the Alternative Fund* $6,500,000 from the Motor Vehicle Account in the State Transportation Fund. The bill would require $5,000,000 to be transferred annually to the Alternative Fund from the Public Interest Research, Development, and Demonstration Fund.

The bill, until January 1, 2016, would increase vehicle registration fees from $31 to $33, vessel registration fees from $10 to $20 and from $20 to $40, as applicable, specified service fees for identification plates from $15 to $20, and driver's license fees from $24 to $25. The bill would require the additional revenue generated by those fee increases to be deposited in the Alternative Fund for the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program. The bill, until January 1, 2016, would also increase smog abatement fees from $12 to $20, and would require half of the additional

revenue generated by that fee increase to be deposited in the Air Quality Improvement Fund for the Air Quality Improvement Program and the other half of that additional revenue to be deposited in the Alternative Fund for the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program.

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. The Legislature finds and declares all of the following:

(a) The California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code) requires California to reduce statewide greenhouse gas emissions to 1990 levels by 2020.

(b) The transportation sector is responsible for approximately 40 percent of statewide greenhouse gas emissions.

(c) The State Energy Resources Conservation and Development Commission (Energy Commission) in its Integrated Energy Policy Report recommends that alternative fuels comprise 20 percent of on-road motor vehicle fuels by 2020.

(d) The State Air Resources Board is currently developing a "low-carbon" fuel standard for transportation fuels to reduce the carbon intensity of transportation fuels by 10 percent by 2020.

(e) The Energy Commission will adopt a state alternative fuel implementation plan by June 30, 2007, to increase the use of alternative transportation fuels by recommending policies and financial incentives, and identifying barriers to alternative fuel use.

(f) Investing in the development of innovative and pioneering technologies will assist California in achieving the 2020 statewide limit on emissions of greenhouse gases.

(g) Research, development, and commercialization of alternative fuels and vehicle technologies in California have the potential to strengthen California's economy by providing job growth and helping to reduce the state's vulnerability to petroleum price volatility.

(h) This act will provide ongoing funding for alternative fuel and vehicle technology research, development, demonstration, and

deployment in order to advance the state's leadership in clean technologies, meet the state's clean air and greenhouse gas emission reduction standards, develop public-private partnerships, and ensure an affordable, reliable fuel supply.

(i) This act will ensure that research is conducted to evaluate the air quality impacts of alternative fuels and to establish clear criteria to prevent net increases in criteria air pollutants and air toxics.

(j) This act will be implemented in a manner to ensure the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state.

(k) This act will provide funding consistent with the California Global Warming Solutions Act of 2006, the Integrated Energy Policy Report, the plan adopted pursuant to Section 43866 of the Health and Safety Code, and other state goals and requirements.

SEC. 2. Section 16428.3 of the Government Code is amended to read:

16428.3. (a) Except as provided in subdivision (b) of Section 44273 of the Health and Safety Code, any energy settlement agreement entered into by the Attorney General, after reimbursing the Attorney General's litigation and investigation expenses, to the maximum extent possible, shall direct settlement funds to the following purposes in priority order:

(1) To reduce ratepayer costs of those utility ratepayers harmed by the actions of the settling parties. To the extent the ratepayers of the investor-owned utilities were harmed, the settlement funds shall be directed to reduce their costs, to the maximum extent possible, through reduction of rates or the reduction of ratepayer debt obligations incurred as a result of the energy crisis.

(2) For deposit in the fund.

(b) Nothing in this article shall preclude nonmonetary compensation to the state through an energy settlement agreement, provided that the allocation of benefits from any nonmonetary compensation is consistent with paragraph (1) of subdivision (a).

SEC. 3. Section 44060 of the Health and Safety Code is amended to read:

44060. (a) The department shall prescribe the form of the certificate of compliance or noncompliance, repair cost waivers, and economic hardship extensions.

(b) The certificates, repair cost waivers, and economic hardship extensions shall be in the form of an electronic entry filed with the department, the Department of Motor Vehicles, and any other person designated by the department. The department shall ensure that the motor vehicle owner or operator is provided with a written report, signed by the licensed technician who performed the inspection, of any test performed by a smog check station, including a pass or fail indication, and written confirmation of the issuance of the certificate.

(c) (1) The department shall charge a fee to a smog check station, including a test-only station, and a station providing referee functions, for a motor vehicle inspected at that station that meets the requirements of this chapter and is issued a certificate of compliance, a certificate of noncompliance, repair cost waiver, or economic hardship extension.

(2) The fee charged pursuant to paragraph (1) shall be calculated to recover the costs of the department and any other state agency directly involved in the implementation, administration, or enforcement of the motor vehicle inspection and maintenance program, and shall not exceed the amount reasonably necessary to fund the operation of the program, including all responsibilities, requirements, and obligations imposed upon the department or any of those state agencies by this chapter, that are not otherwise recoverable by fees received pursuant to Section 44034.

(3) Except for adjustments to reflect changes in the Consumer Price Index, as published by the United States Bureau of Labor Statistics, the fee for each certificate, waiver, or extension shall not exceed seven dollars ($7).

(4) Fees collected by the department pursuant to this subdivision shall be deposited in the Vehicle Inspection and Repair Fund. It is the intent of the Legislature that a prudent surplus be maintained in the Vehicle Inspection and Repair Fund.

(d) (1) Motor vehicles exempted under paragraph (4) of subdivision (a) of Section 44011 shall be subject to an annual smog abatement fee of twenty dollars ($20). The department may also, by regulation, subject motor vehicles that are exempted under paragraph (5) of subdivision (a) of Section 44011 to the twenty ~~dollars~~ *dollar* ($20) annual smog abatement fee. Payment of the annual smog abatement fee shall be made to the Department of Motor Vehicles at the time of registration of the motor vehicle.

(2) (A) Except as provided in subdivision (a) of Section 44091.1 and subparagraph (B), fees collected pursuant to this subdivision shall be deposited on a daily basis into the Vehicle Inspection and Repair Fund.

(B) (i) Of the total amount of each fee collected pursuant to paragraph (1), four dollars ($4) shall be deposited into the Air Quality Improvement Fund created by Section 44270.6.

(ii) Of the total amount of each fee collected pursuant to paragraph (1), four dollars ($4) shall be deposited into the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund created by Section 44273.

(e) The sale or transfer of the certificate, waiver, or extension by a licensed smog check station or test-only station to any other licensed smog check station or to any other person, and the purchase or acquisition of the certificate, waiver, or extension, by any person, other than from the department, the department's designee, or pursuant to a vehicle's inspection or repair conducted pursuant to this chapter, is prohibited.

(f) Following implementation of the electronic entry certificate under subdivision (b), the department may require the modification of the analyzers and other equipment required at smog check stations to prevent the entry of a certificate that has not been issued or validated through prepayment of the fee authorized by subdivision (c).

(g) The fee charged by licensed smog check stations to consumers for a certificate, waiver, or extension shall be the same amount that is charged by the department.

(h) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2016, deletes or extends that date.

SEC. 4. Section 44060 is added to the Health and Safety Code, to read:

44060. (a) The department shall prescribe the form of the certificate of compliance or noncompliance, repair cost waivers, and economic hardship extensions.

(b) The certificates, repair cost waivers, and economic hardship extensions shall be in the form of an electronic entry filed with the department, the Department of Motor Vehicles, and any other person designated by the department. The department shall ensure that the motor vehicle owner or operator is provided with a written

report, signed by the licensed technician who performed the inspection, of any test performed by a smog check station, including a pass or fail indication, and written confirmation of the issuance of the certificate.

(c) (1) The department shall charge a fee to a smog check station, including a test-only station, and a station providing referee functions, for a motor vehicle inspected at that station that meets the requirements of this chapter and is issued a certificate of compliance, a certificate of noncompliance, repair cost waiver, or economic hardship extension.

(2) The fee charged pursuant to paragraph (1) shall be calculated to recover the costs of the department and any other state agency directly involved in the implementation, administration, or enforcement of the motor vehicle inspection and maintenance program, and shall not exceed the amount reasonably necessary to fund the operation of the program, including all responsibilities, requirements, and obligations imposed upon the department or any of those state agencies by this chapter, that are not otherwise recoverable by fees received pursuant to Section 44034.

(3) Except for adjustments to reflect changes in the Consumer Price Index, as published by the United States Bureau of Labor Statistics, the fee for each certificate, waiver, or extension shall not exceed seven dollars ($7).

(4) Fees collected by the department pursuant to this subdivision shall be deposited in the Vehicle Inspection and Repair Fund. It is the intent of the Legislature that a prudent surplus be maintained in the Vehicle Inspection and Repair Fund.

(d) (1) Motor vehicles exempted under paragraph (4) of subdivision (a) of Section 44011 shall be subject to an annual smog abatement fee of twelve dollars ($12). The department may also, by regulation, subject motor vehicles that are exempted under paragraph (5) of subdivision (a) of Section 44011 to the twelve dollar ($12) annual smog abatement fee. Payment of the annual smog abatement fee shall be made to the Department of Motor Vehicles at the time of registration of the motor vehicle.

(2) Except as provided in subdivision (a) of Section 44091.1, fees collected pursuant to this subdivision shall be deposited on a daily basis into the Vehicle Inspection and Repair Fund.

(e) The sale or transfer of the certificate, waiver, or extension by a licensed smog check station or test-only station to any other

licensed smog check station or to any other person, and the purchase or acquisition of the certificate, waiver, or extension, by any person, other than from the department, the department's designee, or pursuant to a vehicle's inspection or repair conducted pursuant to this chapter, is prohibited.

(f) Following implementation of the electronic entry certificate under subdivision (b), the department may require the modification of the analyzers and other equipment required at smog check stations to prevent the entry of a certificate that has not been issued or validated through prepayment of the fee authorized by subdivision (c).

(g) The fee charged by licensed smog check stations to consumers for a certificate, waiver, or extension shall be the same amount that is charged by the department.

(h) This section shall become operative on January 1, 2016.

SEC. 5. Chapter 8.9 (commencing with Section 44270) is added to Part 5 of Division 26 of the Health and Safety Code, to read:

## CHAPTER 8.9. ALTERNATIVE FUEL, CLEAN AIR, AND CARBON REDUCTION PROGRAMS

44270. This chapter shall be known, and may be cited, as the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007.

~~44270.3. For the purposes of this chapter, the following terms have the following meanings:~~

~~(a) "Alternative fuel" means a nonpetroleum fuel, including, but not limited to, electricity, ethanol, biodiesel, methanol, or natural gas that, when used in vehicles, has demonstrated to the satisfaction of the state board, to have the ability to meet applicable vehicular emission standards. For the purpose of this chapter, alternative fuel may also include petroleum fuel blended with nonpetroleum constituents.~~

~~(b) "Commission" means the State Energy Resources Conservation and Development Commission.~~

~~(c) "Full fuel-cycle assessment" or "life-cycle assessment" means evaluating and comparing the full environmental and health impacts of each step in the life cycle of a fuel, including, but not limited to, all of the following:~~

~~(1) Feedstock production, extraction, transport, and storage.~~

~~(2) Fuel production, distribution, transport, and storage.~~

~~(3) Vehicle operation, including refueling, combustion, conversion, permeation, and evaporation.~~

~~44270.5. (a) The Air Quality Improvement Program is hereby created to fund, upon appropriation by the Legislature, air quality improvement projects relating to fuel and vehicle technologies not addressed by the Carl Moyer Memorial Air Quality Standards Attainment Program created by Chapter 9 (commencing with Section 44275). The program shall be administered by the state board in coordination with the commission, and other state agencies that the state board deems appropriate.~~

~~(b) Projects to be funded by the Air Quality Improvement Program shall include, but not be limited to, all of the following:~~

~~(1) Off-road equipment projects that contemplate action not required by control measures adopted by the state board or any other laws, to mitigate for criteria air pollutant and toxic air contaminant emissions.~~

~~(2) Projects that provide mitigation for air pollution resulting from on-road emissions prior to 2012 that were associated with permeation or hydrocarbon emissions or oxides of nitrogen emissions that occurred as a result of the phase out of methyl tertiary-butyl ether (MTBE) and its replacement with ethanol.~~

~~(3) Projects that provide mitigation for off-road gasoline exhaust and evaporative emissions not currently regulated by the state board.~~

~~(4) Projects that provide research to determine the air quality impacts of alternative fuels and projects that study the life-cycle impacts of alternative fuels and conventional fuels, the emissions of biofuel and advanced reformulated gasoline mixes, and air pollution improvement and control technologies for use with alternative fuels and vehicles.~~

~~(5) Projects that augment the University of California's Agricultural Extension Program for research to increase sustainable biofuels production and improve the collection of biomass feedstocks.~~

~~(6) Incentives for small off-road equipment replacement to encourage consumers to replace internal combustion engine lawn and garden equipment.~~

~~(7) Incentives for heavy-duty vehicles and equipment mitigation, including all of the following:~~

~~(A) Lower emission schoolbus programs.~~

~~(B) Heavy-duty electric off-road equipment.~~

~~(C) Regional air quality improvement and attainment programs to assess the most impacted regions of the state.~~

~~(c) The Air Quality Improvement Program may be used to augment the program created by Article 10 (commencing with Section 44100) of Chapter 5.~~

~~44270.6. The Air Quality Improvement Fund is hereby created in the State Treasury, to be administered by the state board. The moneys in the Air Quality Improvement Fund, upon appropriation by the Legislature, shall be expended by the state board in accordance with Section 44270.5.~~

*44270.5. (a) The Air Quality Improvement Program is hereby created to fund, upon appropriation by the Legislature, air quality improvement projects relating to fuel and vehicle technologies. The program shall be administered by the state board in coordination with the commission, and other state agencies that the state board deems appropriate.*

*(b) Projects to be funded by the Air Quality Improvement Program shall include, but not be limited to, all of the following:*

*(1) Off-road equipment projects that contemplate action not required by control measures adopted by the state board or any other laws to mitigate for criteria air pollutant and toxic air contaminant emissions.*

*(2) Projects that provide mitigation for off-road gasoline exhaust and evaporative emissions not currently regulated by the state board.*

*(3) Projects that provide research to determine the air quality impacts of alternative fuels and projects that study the life-cycle impacts of alternative fuels and conventional fuels, the emissions of biofuel and advanced reformulated gasoline mixes, and air pollution improvements and control technologies for use with alternative fuels and vehicles.*

*(4) Projects that augment the University of California's Agricultural Extension Program for research to increase sustainable biofuels production and improve the collection of biomass feedstock.*

*(5) Incentives for small off-road equipment replacement to encourage consumers to replace internal combustion engine lawn and garden equipment.*

*(6) Incentives for heavy-duty vehicles and equipment mitigation, including all of the following:*

*(A) Lower emission schoolbus programs.*

*(B) Heavy-duty electric off-road equipment.*

*(C) Regional air quality improvement and attainment programs to assess the most impacted regions of the state.*

*(c) The Air Quality Improvement Program may be used to augment the program created by Article 10 (commencing with Section 44100) of Chapter 5.*

*44270.6. (a) The Air Quality Improvement Fund is hereby created in the State Treasury, to be administered by the state board. The moneys in the Air Quality Improvement Fund, upon appropriation by the Legislature, shall be expended by the state board in accordance with Section 44270.5.*

*(b) Projects proposed for funding pursuant to subdivision (a) shall be evaluated based on their proposed or potential reduction of criteria air pollutants, cost-effectiveness, contribution to regional air quality improvement, and their ability to promote the use of clean alternative fuels as determined by the state board in coordination with the commission.*

44271. (a) There is hereby created the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program. The program shall be administered, in accordance with this chapter, by the commission in partnership with the state board and in ~~coordination~~ *partnership* with other state agencies deemed appropriate by the commission.

(b) The state board shall adopt and submit to the commission criteria to ensure that the activities undertaken pursuant to the program complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.

(c) (1) The program shall provide, upon appropriation by the Legislature, grants and revolving loans to public agencies, California-based businesses *and projects*, public-private partnerships, vehicle and technology consortia, *fleet owners, consumers,* and academic institutions to develop innovative technologies that transform California's fuel and vehicle types to

help attain the state's climate change policies, without adopting any one preferred fuel or technology.

(2) The program shall provide funding complementary to existing public and private investments, including existing state programs that further the goals of this chapter.

(d) The commission *and the state board* shall establish an advisory body to develop investment strategies to help implement the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program. The advisory body shall have representatives from the ~~State~~ Resources Agency, the Business, Transportation and Housing Agency, the California Environmental Protection Agency, fuel and vehicle technology consortia, environmental *justice and public health* organizations, consumer advocates, academic institutions, and private industry.

(e) *(1)* The commission, in coordination with the state board and the advisory body created pursuant to subdivision (d), shall establish criteria ~~and priorities for the awarding of competitive grants based on an applicant's use of private matching dollars, ability to support existing and future state climate change policy, ability to provide transformative technology advancements, ability to develop innovative new technology solutions, and the promotion of California-based technology firms, among other criteria. The commission shall annually review priorities, guidelines, and other criteria made by the commission, in coordination with the state board and the advisory body.~~ *and priorities for the purpose of allocating funds under the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program.*

*(2) The commission shall annually review these criteria and priorities, in coordination with the state board and the advisory body.*

*(3) Funding criteria and priorities shall reflect a consideration of both of the following:*

*(A) The extent to which the project significantly increases the state's ability to meet existing and future state climate change policy and low-carbon fuel standards, reduces petroleum-based fuel consumption, and reduces criteria air pollutants and air toxics.*

*(B) The extent to which the project attempts to decrease, on a life-cycle basis, the emissions of water pollutants or any other substances known to damage human health or the environment, in comparison to the production and use of California Phase 2*

*Reformulated Gasoline or diesel fuel produced and sold pursuant to California diesel fuel regulations set forth in Article 2 (commencing with Section 2280) of Chapter 5 of Division 3 of Title 13 of the California Code of Regulations.*

*(C) The project is not otherwise required to be undertaken pursuant to state or federal law.*

*(4) The commission, in partnership with the state board, shall develop sustainability criteria to ensure that any fuel or technology deployment project meets all of the following requirements:*

*(A) The project does not adversely impact the state's natural resources.*

*(B) The project complies with all applicable laws and regulations.*

*(C) A full fuel cycle analysis has been undertaken with regard to the project.*

*(5) Eligible biomass projects shall not be derived from environmentally sensitive lands protected by state or federal law.*

*(6) Funding criteria shall be established to prioritize a research development and deployment project that includes, at a minimum, any of the following features:*

*(A) The project provides private matching funds.*

*(B) The project demonstrates an ability to provide transformative technology advancements.*

*(C) The project demonstrates the ability to develop innovative new technology.*

*(D) The project promotes California-based technology firms.*

44272. Projects to be funded by the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Program shall include, but not be limited to, all of the following:

(a) Alternative and renewable fuel research and development projects to improve and develop alternative and low-carbon fuels, including ethanol, dimethyl ether, renewable diesel, natural gas, and biomethane, among others, and their feedstocks that have high potential for long-term or short-term commercialization.

(b) Alternative and renewable fuel deployment projects that optimize fuels for existing and developing engine technologies, production of alternative and low-carbon fuels in California, and development of less carbon intensive processes for current fuels.

(c) Technology deployment projects to decrease the overall impact of a fuel's life-cycle carbon footprint and sustainability.

(d) Alternative and renewable fuel infrastructure, fueling stations, and equipment incentive projects, including revolving loans and grants to small- and medium-sized businesses for these purposes.

(e) Alternative and renewable fuel and efficient vehicle technology research development projects for the improvement and development of light-, medium- and heavy-duty vehicle technologies that provide for better fuel efficiency, alternative fuel usage and storage, or emission reductions, including propulsion systems, light weight materials, energy storage, engine optimization with a target particularly for renewable and low carbon fuels, electronic and electrified components, hybrid technology, plug-in hybrid technology, and fuel cell technology.

(f) Alternative and renewable fuel and efficient vehicle technology deployment programs and projects for the demonstration and deployment of vehicle technologies in California that accelerate the commercialization of vehicle technology, including buy-down programs for near-market and market-path deployments.

(g) Revolving loans to small and medium size businesses for medium- and heavy-duty vehicle fleets to retrofit existing fleets with technologies that create higher fuel efficiencies, including idle management technology and aerodynamic retrofits that decrease fuel consumption.

(h) Alternative fuel and electric infrastructure projects that promote infrastructure development connected with existing fleets, public transit, and existing transportation corridors.

44273. (a) The Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund is hereby created in the State Treasury, to be administered by the commission. The moneys in the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund, upon appropriation by the Legislature, shall be expended by the commission in accordance with Sections 44271 and 44272.

(b) (1) For the purposes of this subdivision, “Williams settlement funds” means any moneys obtained, and any interest generated on the moneys, through the settlement of litigation with The Williams Companies, Inc. and Williams Energy Marketing & Trading Company, made and entered into as of November 11, 2002.

(2) Notwithstanding Section 16428.3 of the Government Code and any other provision of law, of the Williams settlement funds deposited in the Ratepayer Relief Fund, the sum of thirty million dollars ($30,000,000) is hereby transferred to the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund.

(c) The sum of six million five hundred thousand dollars ($6,500,000) is hereby transferred from the Motor Vehicle Account in the State Transportation Fund to the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund.

(d) Notwithstanding any other provision of law, the sum of five million dollars ($5,000,000) shall be transferred annually from the Public Interest Research, Development, and Demonstration Fund created by Section 384 of the Public Utilities Code to the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund.

SEC. 6. Section 25620.16 is added to the Public Resources Code, to read:

25620.16. Notwithstanding any other provision of law, the sum of five million dollars ($5,000,000) shall be transferred annually from the Public Interest Research, Development, and Demonstration Fund to the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund created by Section 44273 of the Health and Safety Code.

SEC. 7. Section 9250 of the Vehicle Code is amended to read:

9250. (a) A registration fee of thirty-three dollars ($33) shall be paid to the department for the registration of every vehicle or trailer coach of a type subject to registration under this code, except those vehicles that are expressly exempted under this code from the payment of registration fees.

(b) The registration fee imposed under this section applies to all vehicles described in Section 5004, whether or not special identification plates are issued to that vehicle.

(c) Trailer coaches are subject to the fee provided in subdivision (a) for each unit of the trailer coach.

(d) This section applies to all of the following:

(1) The initial or original registration, on or after January 1, 2004, of any vehicle not previously registered in this state.

(2) The renewal of registration of any vehicle for which the registration period expires on or after January 1, 2004, regardless

of whether a renewal application was mailed to the registered owner prior to January 1, 2004.

(3) Any renewal of a registration that expired on or before December 31, 2003, but for which the fees are not paid until on or after January 1, 2004.

(e) Notwithstanding any other provision of law, of the total amount of each fee collected pursuant to subdivision (a), two dollars ($2) shall be deposited into the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund created by Section 44273 of the Health and Safety Code.

(f) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2016, deletes or extends that date.

SEC. 8. Section 9250 is added to the Vehicle Code, to read:

9250. (a) A registration fee of thirty-one dollars ($31) shall be paid to the department for the registration of every vehicle or trailer coach of a type subject to registration under this code, except those vehicles that are expressly exempted under this code from the payment of registration fees.

(b) The registration fee imposed under this section applies to all vehicles described in Section 5004, whether or not special identification plates are issued to that vehicle.

(c) Trailer coaches are subject to the fee provided in subdivision (a) for each unit of the trailer coach.

(d) This section applies to all of the following:

(1) The initial or original registration, on or after January 1, 2004, of any vehicle not previously registered in this state.

(2) The renewal of registration of any vehicle for which the registration period expires on or after January 1, 2004, regardless of whether a renewal application was mailed to the registered owner prior to January 1, 2004.

(3) Any renewal of a registration that expired on or before December 31, 2003, but for which the fees are not paid until on or after January 1, 2004.

(e) This section shall become operative on January 1, 2016.

SEC. 9. Section 9261 of the Vehicle Code is amended to read:

9261. (a) A service fee of twenty dollars ($20) shall be paid for an identification plate issued pursuant to Section 5014. Publicly owned special construction equipment, cemetery equipment, special

mobile equipment, logging vehicles, and implements of husbandry are exempt from the service charge.

(b) A service fee of twenty dollars ($20) shall be paid for an identification plate issued pursuant to Section 5016.5.

(c) Upon application for the transfer of interest of an owner in a piece of equipment, vehicle, or implement of husbandry identified pursuant to Section 5014, the transferee shall pay a fee of twenty dollars ($20).

(d) A fee of twenty dollars ($20) shall be paid upon the renewal of an identification plate issued pursuant to Section 5014 or 5016.5.

(e) Notwithstanding any other provision of law, of the total amount of each fee collected pursuant to this section, five dollars ($5) shall be deposited into the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund created by Section 44273 of the Health and Safety Code.

(f) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2016, deletes or extends that date.

SEC. 10. Section 9261 is added to the Vehicle Code, to read:

9261. (a) A service fee of fifteen dollars ($15) shall be paid for an identification plate issued pursuant to Section 5014. Publicly owned special construction equipment, cemetery equipment, special mobile equipment, logging vehicles, and implements of husbandry are exempt from the service charge.

(b) A service fee of fifteen dollars ($15) shall be paid for an identification plate issued pursuant to Section 5016.5.

(c) Upon application for the transfer of interest of an owner in a piece of equipment, vehicle, or implement of husbandry identified pursuant to Section 5014, the transferee shall pay a fee of fifteen dollars ($15).

(d) A fee of fifteen dollars ($15) shall be paid upon the renewal of an identification plate issued pursuant to Section 5014 or 5016.5.

(e) This section shall become operative on January 1, 2016.

SEC. 11. Section 9853 of the Vehicle Code is amended to read:

9853. (a) The owner of each vessel requiring numbering by this state shall file an initial application for a number with the department or with an agent authorized by the department on forms approved by the department. The forms shall be prepared in cooperation with the Department of Boating and Waterways. The application shall contain the true name and address of the owner

and of the legal owner, if any, and the hull identification number of the vessel as may be required by the department. The application shall be signed by the owner of the vessel and shall be accompanied by a fee of nine dollars ($9), in addition to the fees required under subdivision (b), except that an owner of a vessel registered outside this state who is submitting an application for registration in this state shall pay a fee of thirty-seven dollars ($37), in addition to the fees required under subdivision (b).

(b) (1) Whenever the fee for original registration of a vessel becomes due between January 1 and December 31 of any even-numbered year, the application shall be accompanied by a fee of twenty dollars ($20), in addition to any other fees that are then due and payable.

(2) Whenever the fee for original registration of a vessel becomes due, or is filed with the department, between January 1 and December 31 of any odd-numbered year, the application shall be accompanied by a fee of forty dollars ($40) in addition to any other fees that are then due and payable.

(c) Notwithstanding any other provision of law, of the total amount of each fee collected pursuant *to* subdivision (b), ten dollars ($10) shall be deposited into the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund created by Section 44273 of the Health and Safety Code.

(d) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2016, deletes or extends that date.

SEC. 12. Section 9853 is added to the Vehicle Code, to read:

9853. (a) The owner of each vessel requiring numbering by this state shall file an initial application for a number with the department or with an agent authorized by the department on forms approved by the department. The forms shall be prepared in cooperation with the Department of Boating and Waterways. The application shall contain the true name and address of the owner and of the legal owner, if any, and the hull identification number of the vessel as may be required by the department. The application shall be signed by the owner of the vessel and shall be accompanied by a fee of nine dollars ($9), in addition to the fees required under subdivision (b), except that an owner of a vessel registered outside this state who is submitting an application for registration in this

state shall pay a fee of thirty-seven dollars ($37), in addition to the fees required under subdivision (b).

(b) (1) Whenever the fee for original registration of a vessel becomes due between January 1 and December 31 of any even-numbered year, the application shall be accompanied by a fee of ten dollars ($10), in addition to any other fees that are then due and payable.

(2) Whenever the fee for original registration of a vessel becomes due, or is filed with the department, between January 1 and December 31 of any odd-numbered year, the application shall be accompanied by a fee of twenty dollars ($20) in addition to any other fees that are then due and payable.

(c) This section shall become operative on January 1, 2016.

SEC. 13. Section 14900 of the Vehicle Code is amended to read:

14900. (a) Upon application for an original class C or M driver's license, there shall be paid to the department a fee of twenty-five dollars ($25) for a license that will expire on the fifth birthday of the applicant following the date of the application. The payment of the fee entitles the person paying the fee to apply for a driver's license and to take three examinations within a period of 12 months from the date of the application or during the period that an instruction permit is valid, as provided in Section 12509.

(b) In addition to the application fee specified in subdivision (a), a person who fails to successfully complete the driving skill test on the first attempt shall be required to pay an additional fee of five dollars ($5) for each additional driving skill test administered under that application.

(c) The fee specified in subdivision (b) shall be collected in conjunction with any application submitted on or after July 1, 2003.

(d) Notwithstanding any other provision of law, of the total amount of each fee collected pursuant *to* subdivision (a), one dollar ($1) shall be deposited into the Alternative and Renewable Fuel, Vehicle Technology, Carbon Reduction, and Clean Air Fund created by Section 44273 of the Health and Safety Code.

(e) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2016, deletes or extends that date.

SEC. 14. Section 14900 is added to the Vehicle Code, to read:

14900. (a) Upon application for an original class C or M driver's license, there shall be paid to the department a fee of twenty-four dollars ($24) for a license that will expire on the fifth birthday of the applicant following the date of the application. The payment of the fee entitles the person paying the fee to apply for a driver's license and to take three examinations within a period of 12 months from the date of the application or during the period that an instruction permit is valid, as provided in Section 12509.

(b) In addition to the application fee specified in subdivision (a), a person who fails to successfully complete the driving skill test on the first attempt shall be required to pay an additional fee of five dollars ($5) for each additional driving skill test administered under that application.

(c) The fee specified in subdivision (b) shall be collected in conjunction with any application submitted on or after July 1, 2003.

(d) This section shall become operative on January 1, 2016.

SEC. 15. Section 14900.1 of the Vehicle Code is amended to read:

14900.1. (a) Except as provided in Sections 15250.6 and 15255.1, upon application for the renewal of a driver's license or for a license to operate a different class of vehicle, there shall be paid to the department a fee of twenty-five dollars ($25) for a license that will expire on the fifth birthday of the applicant following the date of the application. The payment of the fee entitles the person paying the fee to apply for a driver's license and to take three examinations within a period of 12 months from the date of the application or during the period that an instruction permit is valid, as provided in Section 12509.

(b) In addition to the application fee specified in subdivision (a), a person who fails to successfully complete the driving skill test on the first attempt shall be required to pay an additional fee of five dollars ($5) for each additional driving skill test administered under that application.

(c) The fee specified in subdivision (b) shall be collected in conjunction with any application submitted on or after July 1, 2003.

(d) Notwithstanding any other provision of law, of the total amount of each fee collected pursuant *to* subdivision (a), one dollar ($1) shall be deposited into the Alternative and Renewable Fuel,

Vehicle Technology, Carbon Reduction, and Clean Air Fund created by Section 44273 of the Health and Safety Code.

(e) This section shall remain in effect only until January 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2016, deletes or extends that date.

SEC. 16. Section 14900.1 is added to the Vehicle Code, to read:

14900.1. (a) Except as provided in Sections 15250.6 and 15255.1, upon application for the renewal of a driver's license or for a license to operate a different class of vehicle, there shall be paid to the department a fee of twenty-four dollars ($24) for a license that will expire on the fifth birthday of the applicant following the date of the application. The payment of the fee entitles the person paying the fee to apply for a driver's license and to take three examinations within a period of 12 months from the date of the application or during the period that an instruction permit is valid, as provided in Section 12509.

(b) In addition to the application fee specified in subdivision (a), a person who fails to successfully complete the driving skill test on the first attempt shall be required to pay an additional fee of five dollars ($5) for each additional driving skill test administered under that application.

(c) The fee specified in subdivision (b) shall be collected in conjunction with any application submitted on or after July 1, 2003.

(d) This section shall become operative on January 1, 2016.

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**AB 118 Support:**

American Federation of State, County and Municipal Employees
AFS Trinity Power Corporation
Advanced Energy Conversion
Agile Turbine Technology LLC
Alliance of Automobile Manufacturers
American Lung Association
Automotive X PRIZE
Azure Dynamics
BSST
Bluewater Network
California Energy Asset Management
California Hydrogen Business Council
California Independent Oil Marketers Association
California League of Conservation Voters
California Natural Gas Vehicle Coalition
California Renewable Fuels Partnership
CALSTART
Capital Green Fuels
Capricorn Investment Group LLC
Capstone Turbine
Ceres
Clean Energy
Clean Energy Asset Management
College of Engineering Center for Environmental Research & Technology
CMEA Ventures
Coalition for Clean Air
Enova Systems Inc.
Daimler Chrysler International
DEHydS
Enova Systems Inc.
Environment California
Environmental Defense
Friends of the Earth
Gas Technology Institute
Haldex Hydraulics Corporation
Hydrogen Business Council
Hydrogenics
Intelligent Energy Inc.
International Truck and Engine Corporation
ISE Corporation
Mack Trucks Inc.
Maxwell Technologies
Mobile Energy Solutions
Moller International Inc.
Natural Resource Defense Council

Nature's Fuel Corporation
Neste Oil
Pacific Ethanol
Planning and Conservation League
Quallion LLC
Quantum Technologies
Sacramento Municipal Utility District
San Francisco PUC
Sierra Club California
State Association of Electrical Workers
State Building and Construction Trades Council-AFL-CIO
State Pipes Trades Council
Superprotonic Inc.
T3 Motion Inc.
Tesla Motors
The BOC Group Inc.
Union of Concerned Scientists
US Hybrid Corporation
UQM Technologies
US Hybrid
UTC Power
Virtual Group L.C.C.
Volvo Trucks North America
Waste Connections
Waste Management
Western Propane Gas Association
Western State Council of Sheet Metal Workers
Westport Innovations

**AB 118 Oppose:**
Automobile Club of Southern California
California Association of Harbor Masters and Port Captains
Howard Jarvis Taxpayers Association

AMENDED IN SENATE JULY 10, 2007

AMENDED IN SENATE JUNE 26, 2007

AMENDED IN ASSEMBLY JUNE 1, 2007

AMENDED IN ASSEMBLY MAY 2, 2007

AMENDED IN ASSEMBLY APRIL 12, 2007

CALIFORNIA LEGISLATURE—2007–08 REGULAR SESSION

# ASSEMBLY BILL No. 1470

**Introduced by Assembly Member Huffman**
**(Principal coauthor: Assembly Member Leno)**
**(Coauthors: Assembly Members Beall, Carter, DeSaulnier, Krekorian, Laird, Maze, Wolk, and Saldana)**
(Coauthors: Senators ~~Kuehl and Romero~~ *Corbett, Florez, Kuehl, Romero, Scott, and Wiggins*)

February 23, 2007

An act to add the heading of Article 1 (commencing with Section 2851) to, and to add and repeal Article 2 (commencing with Section 2860) of, Chapter 9 of Part 2 of Division 1 of, the Public Utilities Code, relating to solar energy.

## LEGISLATIVE COUNSEL'S DIGEST

AB 1470, as amended, Huffman. Solar energy: Solar Water Heating and Efficiency Act of 2007.

(1) Under existing law, the Public Utilities Commission has regulatory authority over public utilities, including gas corporations. The commission is required to implement elements of the California Solar Initiative, which modifies the self-generation incentive program

for distributed generation resources and provides incentives to customer-side photovoltaics and solar thermal electric projects under one megawatt. The commission is required to award monetary incentives for up to the first megawatt of alternating current generated by solar energy systems that meet the eligibility criteria established by the State Energy Resources Conservation and Development Commission (Energy Commission). The commission is required to adopt a performance-based incentive program for solar energy photovoltaic systems and is authorized to award monetary incentives for solar thermal and solar water heating devices in a total amount up to $100,800,000.

This bill would establish the Solar Water Heating and Efficiency Act of 2007. The bill would make findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand. The bill would define several terms for purposes of the act. The bill would require the commission~~, after the receipt and evaluation of data on the appropriate level and type of incentives needed to promote installation of solar water heating systems~~ *to evaluate the data available* from a specified pilot program, *and, if it makes a specified determination,* to design and implement a program to incentivize the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

The bill would require the commission, in consultation with the Energy Commission and interested members of the public, to establish eligibility criteria for the solar water heating systems receiving gas customer funded incentives. The commission would be required to establish conditions on those incentives. The bill would specify that, except for the Solar Water Heating Pilot Program in San Diego, only solar water heating technologies that displace electricity are eligible for a portion of California Solar Initiative funds, as determined by the commission. The commission would be required to allocate not less than 10% of the overall funds for installation of solar water heating systems for specified affordable housing projects and specify that no moneys be diverted from any existing programs for low-income ratepayers. The bill would specify that the consumer rebates decline over time and be structured to reduce the cost of solar water heating technologies. The Energy Commission, in coordination with the commission, would be required to consider, when appropriate, coupling rebates for solar water heating systems with complementary energy efficient technologies. The commission would be required to report to

the Legislature, not later than July 1, 2010, on the effectiveness of the program. The bill would repeal these provisions on August 1, 2018.

(2) Existing law establishes a surcharge on all natural gas consumed in the state to fund certain low-income assistance programs, cost-effective energy efficiency and conservation activities, and public interest research and development. Existing law requires a public utility gas corporation, as defined, to collect the surcharge from natural gas consumers, as specified. The moneys from the surcharge are deposited in the Gas Consumption Surcharge Fund and are continuously appropriated to specified entities, including to the commission, or to an entity designated by the commission, to fund low-income assistance programs, cost-effective energy efficiency and conservation activities, and public interest research and development not adequately provided by the competitive and regulated markets.

This bill would require the commission to fund the program of the Solar Water Heating and Efficiency Act of 2007, for the service territories of the gas corporations, through a surcharge applied to gas customers in those service territories based on the amount of natural gas consumed, not to exceed $250,000,000 over the course of the 10-year program. The bill would require the commission to annually establish a surcharge rate for each class of gas customers. The bill would exempt from that surcharge those gas customers participating in the California Alternate Rates for Energy (CARE) or Family Electric Rate Assistance (FERA) programs. The bill would also authorize those individual and families whose household income is at or below 300% of the federal poverty level to apply for an exemption. The bill would require a gas corporation to provide information to their ratepayers no fewer than 2 times per year regarding the availability of these exemptions. The bill would require that the program be administered by the gas corporations or 3rd party administrators, as determined by the commission, and subject to the supervision of the commission.

(3) The bill would require the governing body of each publicly owned utility providing gas service to retail end-use gas customers, to adopt, implement, and finance a solar water heating system incentive program meeting certain requirements, thereby imposing a state-mandated local program.

(4) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

*The people of the State of California do enact as follows:*

SECTION 1. The heading of Article 1 (commencing with Section 2851) is added to Chapter 9 of Part 2 of Division 1 of the Public Utilities Code, to read:

Article 1. Solar Energy Systems

SEC. 2. Article 2 (commencing with Section 2860) is added to Chapter 9 of Part 2 of Division 1 of the Public Utilities Code, to read:

Article 2. Solar Water Heating Systems

2860. This article shall be known, and may be cited, as the Solar Water Heating and Efficiency Act of 2007.

2861. As used in this article, the following terms have the following meanings:

(a) "Energy Commission" means the State Energy Resources Conservation and Development Commission.

(b) "Gas customer" includes both "core" and "noncore" customers, as those terms are used in Chapter 2.2 (commencing with Section 328) of Part 1, that receive retail end-use gas service within the service territory of a gas corporation.

(c) "$kW_{th}$" means the kilowatt thermal capacity of a solar water heating system, measured consistent with the standard established by the SRCC.

(d) "$kWh_{th}$" means kilowatthours thermal as measured by the number of kilowatts thermal generated, or displaced, in an hour.

(e) "New Solar Homes Partnership" means the 10-year program, administered by the Energy Commission, encouraging solar energy systems in new home construction.

(f) "Solar heating collector" means a device that is used to collect or capture heat from the sun and that is generally, but need not be, located on a roof.

(g) "Solar water heating system" means a solar energy device that has the primary purpose of reducing demand for natural gas through water heating, space heating, or other methods of capturing energy from the sun to reduce natural gas consumption in a home, business, or any building receiving natural gas that is subject to the surcharge established pursuant to Section 2860, or exempt from the surcharge pursuant to subdivision (c) of Section 2863, and that meets or exceeds the eligibility criteria established pursuant to Section 2864. "Solar water heating systems" do not include solar pool heating systems.

(h) "SRCC" means the Solar Rating and Certification Corporation.

2862. The Legislature finds and declares all of the following:

(a) California is heavily dependent on natural gas, importing more than 80 percent of the natural gas it consumes.

(b) Rising worldwide demand for natural gas and a shrinking supply create rising and unstable prices that can harm California consumers and the economy.

(c) Natural gas is a fossil fuel and a major source of global warming pollution and the pollutants that cause air pollution, including smog.

(d) California's growing population and economy will put a strain on energy supplies and threaten the ability of the state to meet its global warming goals unless specific steps are taken to reduce demand and generate energy cleanly and efficiently.

(e) Water heating for domestic and industrial use relies almost entirely on natural gas and accounts for a significant percentage of the state's natural gas consumption.

(f) Solar water heating systems represent the largest untapped natural gas saving potential remaining in California.

(g) In addition to financial and energy savings, solar water heating systems can help protect against future gas and electricity shortages and reduce our dependence on foreign sources of energy.

(h) Solar water heating systems can also help preserve the environment and protect public health by reducing air pollution, including carbon dioxide, a leading global warming gas, and nitrogen oxide, a precursor to smog.

(i) Growing demand for these technologies will create jobs in California as well as promote greater energy independence, protect consumers from rising energy costs and result in cleaner air.

(j) It is in the interest of the State of California to promote solar water heating systems and other technologies that directly reduce demand for natural gas in homes and businesses.

(k) It is the intent of the Legislature to build a mainstream market for solar water heating systems that directly reduces demand for natural gas in homes, businesses, and government buildings. Toward that end, it is the goal of this article to install at least 200,000 solar water heating systems on homes, businesses, and government buildings throughout the state by 2017, thereby lowering prices and creating a self-sufficient market that will sustain itself beyond the life of this program.

(*l*) It is the intent of the Legislature that the solar water heating system incentives created by the act should be a cost-effective investment by gas customers. Gas customers will recoup the cost of their investment through lower prices as a result of avoiding purchases of natural gas, and benefit from additional system stability and pollution reduction benefits.

2863. (a) ~~After meaningful data is available and evaluated by the commission~~ *The commission shall evaluate the data available* from the Solar Water Heating Pilot Project conducted by the California Center for Sustainable~~ Energy on the appropriate level and type of incentives needed to promote installation of solar water heating systems~~ *Energy. If, after a public hearing, the commission determines that a solar water heating program is cost effective for ratepayers and in the public interest,* the commission shall do all of the following:

(1) Design and implement a program applicable to the service territories of a gas corporation, to achieve the goal of the Legislature to promote the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

(2) The program shall be administered by gas corporations or third-party administrators, as determined by the commission, and subject to the supervision of the commission.

(3) The commission shall coordinate the program with the Energy Commission's New Solar Homes Partnership to achieve the goal of building zero-energy homes.

(b) (1) The commission shall fund the program through the use of a surcharge applied to gas customers based upon the amount of natural gas consumed. The surcharge shall be in addition to any

other charges for natural gas sold or transported for consumption in this state.

(2) The commission shall impose the surcharge at a level that is necessary to meet the goal of installing 200,000 solar water heating systems, or the equivalent output of 200,000 solar water heating systems, on homes and businesses in California by 2017. Funding for the program established by this article shall not, for the collective service territories of all gas corporations, exceed two hundred fifty million dollars ($250,000,000) over the course of the 10-year program.

(3) The commission shall annually establish a surcharge rate for each class of gas customers. Any gas customer participating in the California Alternate Rates for Energy (CARE) or Family Electric Rate Assistance (FERA) programs shall be exempt from paying any surcharge imposed to fund the program designed and implemented pursuant to this article. Additionally, individuals and families whose household income is at or below 300 percent of the federal poverty level may apply for an exemption from paying any surcharge designed and implemented pursuant to this article. Gas corporations shall provide information to their ratepayers no fewer than two times per year regarding the availability of these exemptions.

(4) Any surcharge imposed to fund the program designed and implemented pursuant to this article shall not be imposed upon the portion of any gas customer's procurement of natural gas that is used or employed for a purpose that Section 896 excludes from being categorized as the consumption of natural gas.

(5) The gas corporation or other person or entity providing revenue cycle services, as defined in Section 328.1, shall be responsible for collecting the surcharge.

(c) Funds shall be allocated for the benefit of gas customers to promote utilization of solar water heating systems.

(d) In designing and implementing the program required by this article, no moneys shall be diverted from any existing programs for low-income ratepayers or cost-effective energy efficiency programs.

2864. (a) The commission, in consultation with the Energy Commission and interested members of the public, shall establish eligibility criteria for solar water heating systems receiving gas

customer funded incentives pursuant to this article. The criteria should specify and include all of the following:

(1) Design, installation, and energy output or displacement standards. To be eligible for rebate funding, a residential solar water heating system shall, at a minimum, have a SRCC OG-300 Solar Water Heating System Certification. Solar collectors used in systems for multifamily residential, commercial, or industrial water heating shall, at a minimum, have a SRCC OG-100 Solar Water Heating System Certification.

(2) Require that solar water heating system components are new and unused, and have not previously been placed in service in any other location or for any other application.

(3) Require that solar water heating collectors have a warranty of not less than 10 years to protect against defects and undue degradation.

(4) Require that solar water heating systems are in buildings connected to a natural gas utility's distribution system within the state.

(5) Require that solar water heating systems have meters or other $kWh_{th}$ measuring devices in place to monitor and measure the system's performance and the quantity of energy generated or displaced by the system. The criteria shall require meters for systems with a capacity for displacing over 30 $kW_{th}$. The criteria may require meters for systems with a capacity of 30 $kW_{th}$ or smaller.

(6) Require that solar water heating systems are installed in conformity with the manufacturer's specifications and all applicable codes and standards.

(b) No gas customer funded incentives shall be made for a solar water heating system that does not meet the eligibility criteria.

2865. (a) The commission shall establish conditions on gas customer funded incentives pursuant to this article. The conditions shall require both of the following:

(1) Appropriate siting and high-quality installation of the solar water heating system based on installation guidelines that maximize the performance of the system and prevent qualified systems from being inefficiently or inappropriately installed. The conditions shall not impact housing designs or densities presently authorized by a city, county, or city and county. The goal of this paragraph is to achieve efficient installation of solar water heating systems

and promote the greatest energy production or displacement per gas customer dollar.

(2) Appropriate energy efficiency improvements in the new or existing home or commercial structure where the solar hot water system is installed.

(b) The commission shall set rating standards for equipment, components, and systems to ensure reasonable performance and shall develop standards that provide for compliance with the minimum ratings.

2866. The commission shall provide not less than 10 percent of the overall funds for installation of solar water heating systems on low-income and affordable housing projects undertaken pursuant to Section 50052.5, 50053, 50079.5, or 50199.14 of the Health and Safety Code. If deemed appropriate in consultation with the California Tax Credit Allocation Committee, the commission may establish a grant program or a revolving loan or loan guarantee program for affordable housing projects consistent with the requirements of Chapter 5.3 (commencing with Section 25425) of Division 15 of the Public Resources Code.

2867. (a) The rebates provided through this program shall decline over time. They shall be structured so as to drive down the cost of the solar water heating technologies, and be paid out on a performance-based incentive basis so that incentives are earned based on the actual energy savings, or on predicted energy savings as established by the commission.

(b) The commission shall consider federal tax credits and other incentives available for this technology when determining the appropriate rebate amount.

(c) The commission shall consider the impact of rebates for solar water heating systems pursuant to this article on existing incentive programs for energy efficiency technology.

(d) In coordination with the commission, the Energy Commission shall consider, when appropriate, coupling rebates for solar water heating systems with complementary energy efficiency technologies, including, but not limited to, efficient hot water heating tanks and tankless or on demand hot water systems that can be installed in addition to the solar water heating system.

2867.1. Not later than July 1, 2010, the commission shall report to the Legislature as to the effectiveness of the program and make recommendations as to any changes that should be made to the

program. This report shall include justification for the size of the rebate program in terms of total available incentive moneys as well as the anticipated benefits of the program in its entirety. To facilitate the understanding of how solar water heating systems compare with other clean energy and energy efficiency technologies, all documents related to and rebates provided by this program shall be measured in both $kWh_{th}$ and therms of natural gas saved.

2867.2. Except for the Solar Water Heating Pilot Program in San Diego, solar water heating technologies shall not be eligible for California Solar Initiative (CSI) funds, pursuant to Section 2851, unless they also displace electricity, in which case only the electricity displacing portion of the technology may be eligible under the CSI program, as determined by the commission.

2867.3. In order to further the state goal of encouraging the installation of 200,000 solar water heaters by 2017, the governing body of each publicly owned utility providing gas service to retail end-use gas customers shall, after a public proceeding, adopt, implement, and finance a solar water heating system incentive program that does all the following:

(a) Ensures that any solar water heating system receiving monetary incentives complies with eligibility criteria adopted by the governing body. The eligibility criteria shall include those elements contained in paragraphs (1) to (6), inclusive, of subdivision (a) of Section 2864.

(b) Includes minimum ratings and standards for equipment, components, and systems to ensure reasonable performance and compliance with the minimum ratings and standards.

(c) Includes an element that addresses the installation of solar water heating systems on low-income and affordable housing projects undertaken pursuant to Section 50052.5, 50053, or 50199.14 of the Health and Safety Code. If deemed appropriate in consultation with the California Tax Credit Allocation Committee, the governing board may establish a grant program or a revolving loan or loan guarantee program for affordable housing projects consistent with the requirements of Chapter 5.3 (commencing with Section 25425) of Division 15 of the Public Resources Code.

2867.4. This article shall remain in effect only until August 1, 2018, and as of that date is repealed, unless a later enacted statute, that is enacted before August 1, 2018, deletes or extends that date.

SEC. 3. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

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**AB 1470 Support:**

American Institute of Architects, San Fernando Valley Chapter
Association of California Community and Energy Services
Campesinos Unidos, Inc.
Center for Biological Diversity
Central Coast Alliance United for a Sustainable Economy
City of Galt
City of Palo Alto
Clean Power Campaign
Community Action Agency of Butte County, Inc.
Community Action Partnership of San Bernardino
Community Environmental Council
Community Resource Project, Inc.
Davis Energy Group
Diablo Solar Services, Inc.
East Bay Municipal Utility District
Environment California **(SPONSOR)**
FAFCO, Inc.
Lee, Burkhart, Liu Architects
National Wildlife Federation
Natural Resources Defense Council
NO LNG Community Alliance
NorCal Solar Energy Association
Pacific Environment
Pacific Gas and Electric Company
Planning and Conservation League
Sierra Club California
Sierra Pacific Solar
Southern California Forum for Environmental and Human Services
SunTechnics Energy Systems, Inc.
Union of Concerned Scientists
Voter Solar Initiative
Working Assets
Two individuals

**AB 1470 Oppose:**

California Taxpayers' Association
Howard Jarvis Taxpayers Association
Sempra Energy
Stop Hidden Taxes Coalition
The Utility Reform Network

AGENDA: 6

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Brad Wagenknecht and
Members of the Legislative Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2007

Re: Update on Bills on which the District has Previously Adopted Positions

RECOMMENDED ACTION:

None. For information only.

DISCUSSION

July 13th is the deadline for bills to make it out of their assigned policy committees in their second house. Remaining steps to becoming law include Appropriations Committee hearings for fiscal bills, a floor vote, a subsequent floor vote in their house of origin if amendments were made subsequent to the bill leaving the house of origin, and signature by the Governor. Staff will update the Committee on the current status of some of the measures on which the District adopted formal positions. Staff will also update the Committee on the status of budget discussions, including those directly relevant to air quality such as the Proposition 1B air quality funds.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

No direct impact.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Thomas Addison
Reviewed by: Jean Roggenkamp

# BAAQMD BILL DISCUSSION LIST

July 16, 2007

* Bill significantly amended since District adopted position

| BILL NO. | AUTHOR | SUBJECT | BAAQMD, OTHER AGENCY POSITIONS | STATUS |
|---|---|---|---|---|
| AB 6 | Houston | Would require (instead of allow) ARB to adopt market-based programs to implement AB 32 | | 2-yr. bill |
| AB 94 | Levine | Would increase current goals for renewable electricity production to 33% of total power by 2020 | | 2-yr. bill |
| AB 99 | Feuer | Expresses legislative intent that 50% of new cars sold in California by 2012 use clean alternative fuels | | 2-yr. bill. |
| AB 109 | Nunez | Requires ARB to annually report to the Legislature on the implementation of AB 32 of 2006 | | Sen. Approps. |
| AB 114 | Blakeslee | Requires CEC by 2010 to develop a program to encourage, for industrial sources, containment, scrubbing, and capture technologies for carbon dioxide | | 2-yr. bill |
| AB 118 | Nunez | Funding for emission reductions and alternative fuels | | Sen. Approps. |
| AB 217 | Beall | Would change current annual vehicle license fee to biennial, with total amounts paid not changing | | 2-yr. bill |
| AB 218 | Saldana | Eliminates current loophole allowing vehicle registration without smog certificate without penalty | BAAQMD, MTC Support | Sen. Floor |
| AB 233 | Jones | Children's Breathing Rights Act; makes changes to air penalties and requires air districts to report penalty data to ARB | | Sen. Approps. |
| AB 236 | Lieu | Requires maximum use of alternate fuel in flexible fueled state vehicles, and revises purchasing criteria for state fleet | | Sen. Approps. |
| AB 242 | Blakeslee | States legislative intent that early reducers of carbon emissions be rewarded with credits, in effect promoting a market-based implementation of AB 32 | | 2-yr. bill |

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| AB 255 | DeLeon | Establishes Clean Air and Energy Independence Fund, funded with a $4 annual increase in fees paid by vehicles less than 7 years old currently exempted from smog check; administered by ARB | | 2-yr. bill |
| AB 294 | Adams | Addresses manganese particulate matter in the air | | Sen. Approps. |
| AB 307 | Hayashi | Exempts fuel cell transit buses bought by public agencies from sales tax | | 2-yr. bill |
| AB 391 | Lieu | Increases size of SCAQMD Board from 12 to 13; new member from a west side city other than LA | | 2-yr. bill. |
| AB 444 | Hancock | Authorizes Alameda and Contra Costa congestion management agencies to impose an annual $10 vehicle registration fee surcharge for congestion mitigation | | Sen. Rev.& Tax |
| AB 463 * | Huffman | *Previously* California Clean Ferry Act of 2007; now disabled persons parking measure | BAAQMD Support | Asm. Trans. |
| AB 493 | Ruskin | Establishes fees and rebates respectively at the time of sale of high and low-emitting new motor vehicles | BAAQMD Support | 2-yr. bill |
| AB 505 | Plescia | Income tax credits for hybrid vehicles | | 2-yr. bill |
| AB 532 | Wolk | Requires solar electric installation by 2009 on all state buildings where feasible | | Sen. Approps. |
| AB 534 | Smyth | Increases Bicycle Transportation Account funding | | Sen. Approps. |
| AB 568 | Karnette | Requires establishment of Port Community Advisory Committees | | Sen. Loc. Govt. |
| AB 575 | Arambula | Prioritizes Proposition 1B air quality bond funding to South Coast and San Joaquin | BAAQMD Oppose | 2-yr. bill |
| AB 616 | Jones | Requires annual (instead of biennial) smog checks for cars at least 15 years old currently in the program | BAAQMD, MTC Support | Sen. Approps. |
| AB 619 * | Emmerson | Amnesty for vehicles that committed title fraud *(amended to address BAAQMD concerns)* | BAAQMD Oppose | Sen. Approps. |
| AB 630 | Price | Requires ARB to submit local district waiver request to EPA | | 2-yr. bill |
| AB 631 | Horton | Requires new fueling stations by 2010 to be able to provide ethanol (E-85) | | 2-yr. bill |
| AB 657 | Jeffries | Spot bill on greenhouse gas emissions | | 2-yr. bill |
| AB 700 | Lieu | ARB study of air pollution from Santa Monica airport | | Sen. Approps. |
| AB 705 | Huffman | Requires state regulations for geologic carbon sequestration | | 2-yr. bill |

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| AB 712 | DeLeon | Bill to provide funding for trash trucks to comply with ARB pending off-road regulations | | Sen. Approps. |
| AB 746 | Krekorian | Expedited processing of renewable power plants | | Sen. Approps. |
| AB 747 | Levine | Requires ARB to develop regulations to cut carbon in transporation fuels, using market approaches | | 2-yr. bill |
| AB 785 | Hancock | Addresses urban heat islands | | Sen. Approps. |
| AB 829 | Duvall | Affects after-market motorcycle parts certified by the ARB and their use | | Sen. Floor |
| AB 842 | Jones | States intent to award Prop 1B funds to jurisdictions that have a plan to reduce vehicle miles traveled | MTC, ABAG Oppose | 2-yr. bill |
| AB 846 | Blakeslee | Clean Marine Fuels Tax Incentive Act | BAAQMD Support | 2-yr. bill |
| AB 934 | Duvall | Would prohibit air districts from adopting airborne toxic control measures for non-stationary sources | BAAQMD Oppose | 2-yr. bill. |
| AB 995 | Nava | Prop 1B bond funding of trade corridor and air quality improvements | | Sen. Approps. |
| AB 1077 | Lieber | California Plug-in Hybrid Electric Vehicle Leadership Act of 2007 | BAAQMD Support | Sen. Approps. |
| AB 1083 | Huffman | Tax credits for sale of biodiesel fuel | | 2-yr. bill |
| AB 1094 | Arambula | Tax credits for biodiesel vendors | | 2-yr. bill |
| AB 1119 | Fuller | Affects ARB requirements for particulate traps | | Sen. Env. Quality |
| AB 1138 | Brownley | Requires ARB to resolve questions regarding local AQMD boundaries | | 2-yr. bill. |
| AB 1209 * | Karnette | Establishes health-based criteria for distribution of Prop 1B air quality funds | BAAQMD Oppose | Sen. Approps. |
| AB 1225 | DeSaulnier | Requires guidelines on environmental factors to guide state fleet purchases, and local government fleets of more than 100 vehicles | | 2-yr. bill |
| AB 1455 | Arambula | Would establish California Air Quality Zones, and allow loans for entitities within these areas | | Sen. Approps. |
| AB 1488 | Mendoza | Requires a pilot program to integrate light-duty diesel vehicles into smog check | | Sen. Approps. |
| AB 1613 | Blakeslee | Waste Heat and Carbon Emissions Reduction Act | | Sen. Approps. |
| AB 1651 | Alarcon | Tax credits for ‘green’ businesses acquiring ‘green’ machinery | | 2-yr. bill |

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| SB 9 | Lowenthal | Criteria for expenditure of trade corridor funds from Prop 1B | | Asm. Approps. |
| SB 19 | Lowenthal | Criteria for expenditure of air quality funds from Prop 1B | | Asm. Approps. |
| SB 23 | Cogdill | Establishes a SJVUAQMD program to replace gross polluters with donated cleaner vehicles | | Asm. Approps. |
| SB 70 | Florez | Establishes standards for biodiesel and biodiesel blends | | Asm. Approps. |
| SB 71 | Florez | Requires ARB to administer a program to ensure that diesel vehicles owned by the State, cities, counties, and mass transit districts use B20 biodiesel | | 2-yr. bill |
| SB 72 | Florez | Requires ARB to see that diesel schoolbuses (public and private contractors) use B20 biodiesel | | 2-yr. bill |
| SB 73 | Florez | Establishes tax credits for producers of biodiesel | | 2-yr. bill |
| SB 74 | Florez | Exempts biodiesel from sales tax | | 2-yr. bill |
| SB 75 | Florez | Requires state diesel vehicles to be warranted to use B20 biodiesel | | 2-yr. bill |
| SB 140 | Kehoe | Requires California diesel to increase its renewable content first to at least 2%, and then to 5% | | Asm. Approps. |
| SB 210 | Kehoe | Requires ARB to develop a program to reduce carbon content of California transportation fuels by 10% by 2020, and implement a low-carbon fuel standard | | Asm. Approps. |
| SB 240 | Florez | Authorizes SJVUAQMD to increase vehicle registration fee to $30 | | Asm. Approps. |
| SB 412 | Simitian | Spot bill on siting of LNG terminals | | Asm. Approps. |
| SB 494 | Kehoe | Requires ARB to adopt a program so that by 2020 half of new vehicles sold use clean alternative fuels | | Asm. Trans. |
| SB 509 | Simitian | Requires ARB to adopt regulations to limit formaldehyde emissions from composite wood to EU standards | BAAQMD Support | Sen. Approps. |
| SB 531 | Oropeza | Declares legislative intent to reform regulation of air toxics | | 2-yr. bill |
| SB 532 | Oropeza | Spot bill on port air pollution | | 2-yr. bill |
| SB 572 | Cogdill | Declares legislative intent to consider carbon emissions from wildfire, and forest carbon sequestration | | 2-yr. bill |
| SB 587 | Runner | Establishes exemptions from air district permit requirements for certain printing, coating, adhesive application, and laminating operations, subject to specified criteria | BAAQMD Oppose | 2-yr. bill |

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| SB 613 | Simitian | Extends sunset of local San Mateo $4 vehicle registration fee surcharge from 2009 to 2019 | | Asm. Floor |
| SB 719 | Machado | Increases SJVUAQMD Board to 15, with 2 Governor's appointees and 5 city council members | | Asm. Approps. |
| SB 842 | Scott | Adds air protective requirements to gasification (conversion of solid waste to fuel) | | 2-yr. bill |
| SB 857 | Correa | Authorizes study of tax credits for air pollution reduction equipment in SCAQMD and SJVUAQMD | | 2-yr. bill |
| SB 871 | Kehoe | Reestablishes through 2012 the expedited review process for new powerplants | | 2-yr. bill |
| SB 876 | Calderon | Requires ARB to consider economic impacts of diesel fleet rules on small businesses | | 2-yr. bill |
| SB 886 | Negrete McLeod | Ends term limits for South Coast, Sacramento, and Mojave air district board chairs; increases SCAQMD Board from 12 to 13 | | Asm. Approps. |
| SB 974 | Lowenthal | Establishes a container fee of $30 per twenty-foot equivalent unit at LA, Long Beach, and Oakland ports | BAAQMD Support | Asm. Approps. |

AGENDA: 13

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Mark Ross and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 18, 2007

Re: Public Hearing to Consider Proposed Amendments to Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines, and Adoption of CEQA Negative Declaration

RECOMMENDED ACTION:

Staff recommends that the Board of Directors take the following actions:

- Adopt proposed amendments to Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines; and
- Adopt a California Environmental Quality Act (CEQA) Negative Declaration.

BACKGROUND

Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines was adopted in 1993. The rule currently regulates NOx and CO emissions from stationary IC engines of 250 brake horsepower (bhp) or greater powered by gaseous fuels such as natural gas or liquid petroleum gas.

The proposed amendments to Regulation 9, Rule 8 will fulfill the District's commitment to reduce emissions from stationary IC engines under the Senate Bill 656 Particulate Matter Implementation Schedule and implement potential controls proposed for evaluation in further study measure FS-15 from the Bay Area 2005 Ozone Strategy.

DISCUSSION

The proposed amendments to Regulation 9, Rule 8 would:

1. Expand the scope of the rule to regulate NOx emissions from smaller gaseous-fueled stationary IC engines that are larger than 50 bhp,
2. Regulate NOx emissions from liquid-fueled engines, such as diesel engines, larger than 50 bhp, and
3. Establish more stringent emissions limits for NOx for all affected stationary IC engines.

Most of the amendments to the rule would take effect on January 1, 2012. Gaseous-fueled engines between 51 and 250 bhp or any size liquid-fueled engines of model year 1996 or newer would be allowed until January 1, 2016 to comply, provided the engines meet the most stringent emissions limits for new engines at that time (BACT).

A socioeconomic analysis has found that the costs of the proposed amendments would not create significant economic dislocation or loss of jobs. Pursuant to the California Environmental Quality Act (Public Resources Code 21000 et seq.), an initial study for the proposed amendments has been conducted, concluding that the proposed amendments would not create significant adverse environmental impacts.

## RULE DEVELOPMENT PROCESS

The rule development process to bring these proposed amendments to the Board of Directors has involved consultation with engine owners and operators, engine manufacturers, other agencies and District staff, and discussions with trade organizations, including meetings with the California Council for Environmental and Economic Balance. Staff developed the emissions inventory and potential reductions from the review and analysis of over 5000 stationary IC engines listed in the permit database. Staff notified engine owners and operators and other interested parties and conducted a public workshop on March 1, 2007.

The purpose of the Public Workshop was to solicit comments from the public on the proposed amendments to Rule 9-8. Approximately 30 people attended. Based on the comments received, staff made several changes to the proposal. The changes affected the definitions, effective dates, quarterly compliance demonstrations, emissions limits and the form in which the emissions standards are stated.

## MODIFICATIONS TO RULE LANGUAGE

The proposed amendments to Regulation 9, Rule 8 contain several minor changes made after the Public Hearing Notice was issued. These changes clarify the rule and correct numbering in Section 9-8-110: Exemptions, and Section 9-8-402: Reporting Requirements for Delayed Compliance. Changes also provide for reliability testing necessary to meet National Fire Protection Association standards (Section 9-8-330) and explicitly allow 100 hours per year for reliability-related activities for essential public services (Section 9-8-331). These changes do not require a continuation of the public hearing. The changes are indicated by double strikethroughs and double underlines in the attached draft.

## BUDGET CONSIDERATIONS / FINANCIAL IMPACTS

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer / Air Pollution Control Officer

Prepared by: Victor Douglas

Reviewed by: Henry Hilken

Attachments:

Proposed Amendments to Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines
Staff Report for Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines, including appendices
- Comments and Responses
- Socioeconomic Analysis
- CEQA Initial Study and Negative Declaration

# REGULATION 9
# INORGANIC GASEOUS POLLUTANTS
# RULE 8
# NITROGEN OXIDES AND CARBON MONOXIDE FROM STATIONARY INTERNAL COMBUSTION ENGINES

## INDEX

# REGULATION 9
# INORGANIC GASEOUS POLLUTANTS
# RULE 8
# NITROGEN OXIDES AND CARBON MONOXIDE FROM STATIONARY INTERNAL COMBUSTION ENGINES

(Adopted January 20, 1993)

## 9-8-100 GENERAL

**9-8-101 Description:** This rule limits the emissions of nitrogen oxides and carbon monoxide from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower ~~or more.~~

*(Amended August 1, 2001)*

**9-8-110 Exemptions:** The requirements of Sections 9-8-301~~, 302,~~ through 305, and ~~502~~ 501 ~~through~~ and 503 shall not apply to the following:

110.1 Until January 1, 2012, e~~E~~ngines rated by the manufacturer at less than 250 brake horsepower output rating.

110.2 Engines rated by the manufacturer at 50 brake horsepower output rating or less. Effective January 1, 2012.

110.~~2~~3 Until January 1, 2012, e~~E~~ngines fired exclusively by liquid fuels including, but not limited to, diesel fuel, gasoline, and methanol.

110.~~3~~4 Engines used directly and exclusively for the growing of crops or the raising of ~~fowl or~~ animals.

110.~~4~~5 Emergency standby engines.

*(Amended August 1, 2001)*

**9-8-111 Limited Exemption for Low Usage:** The requirements of Sections 9-8-301~~, and~~ 302, 303, 304, and 305 shall not apply to the following low use operations provided the requirements of Sections 9-8-502.1 and 9-8-530 are met:

111.1 Until January 1, 2012, e~~E~~ngines rated at, or below, 1000 brake horsepower ~~which~~ that operate less than 200 hours, exclusive of any emergency use, in any 12-consecutive-month period.

111.2 Until January 1, 2012, e~~E~~ngines rated above 1000 brake horsepower ~~which~~ that operate less than 100 hours, exclusive of any emergency use, in any 12-consecutive-month period.

111.3 Effective January 1, 2012, engines that operate less than 100 hours, exclusive of any emergency use, in any 12-consecutive-month period

**9-8-112 Registered Portable Equipment:** The requirements of this section shall not apply to an internal combustion engine registered as portable pursuant to the Statewide Portable Engine and Equipment Registration Program, Sections 2450-2465, Article 5, Title 13, California Code of Regulations.

## 9-8-200 DEFINITIONS

**9-8-201 Gaseous Fuels:** For the purposes of this rule, gaseous fuels include, but are not limited to:

201.1 Fossil derived fuel gas such as natural gas, methane, ethane, propane, refinery fuel gas, and butane, including gases stored as liquids such as liquified petroleum gas (LPG).

201.2 Waste derived fuel gas such as sewage sludge digester gas or landfill gas.

**9-8-202 Nitrogen Oxide ($NO_x$) Emissions:** The sum of nitric oxide (NO) and nitrogen dioxide ($NO_2$) in the engine exhaust, collectively expressed as nitrogen dioxide.

**9-8-203 Rated Brake Horsepower:** The maximum brake horsepower rating at maximum revolutions per minute (RPM) specified for the engine by the manufacturer or indicated on the engine nameplate.

**9-8-204** **Stationary Internal Combustion Engine (Engine):** Any spark or compression ignited internal combustion engine that is operated, or intended to be operated, at a specific site for more than one year or is attached to a foundation at that site.

**9-8-205** **Rich-Burn Engine:** Any spark or compression ignited internal combustion engine that is designed to be operated with an exhaust stream oxygen concentration of less than 4 percent, by volume. The exhaust gas oxygen content shall be determined from the uncontrolled exhaust stream.

**9-8-206** **Lean-Burn Engine:** Any spark or compression ignited internal combustion engine that is designed to be operated with an exhaust stream oxygen concentration of 4 percent, by volume, or greater. The exhaust gas oxygen content shall be determined from the uncontrolled exhaust stream.

**9-8-230** **Emergency Standby Engine:** Any engine that is exclusively operated:

230.1 For emergency use; and

230.2 For reliability-related activities.

*(Adopted August 1, 2001)*

**9-8-231** **Emergency Use:** The use of an emergency standby or low usage engine during any of the following:

231.1 In the event of unforeseeable loss of regular natural gas supply;

231.2 In the event of unforeseeable failure of regular electric power supply;

231.3 Mitigation or prevention of an imminent f~~F~~lood ~~mitigation~~;

231.4 Mitigation of or prevention of an imminent overflow of s~~S~~ewage or waste water ~~overflow mitigation~~;

231.5 Fire or prevention of an imminent fire;

231.6 Failure or imminent failure of a primary motor or source of power, but only for such time as needed to repair or replace the primary motor or source of power.

231.7 Prevention of the imminent release of hazardous material.

*(Adopted August 1, 2001)*

**9-8-232** **Reliability-related Activities:** Either:

232.1 Operation of an emergency standby engine to test its ability to perform for an emergency use; or

232.2 Operation of an emergency standby engine during maintenance of a primary motor.

*(Adopted August 1, 2001)*

**9-8-233** **Essential Public Service:**

233.1 A sewage treatment facility, and associated collection system, which is publicly owned and operated;

233.2 Water treatment and delivery operations;

233.3 Public transit;

233.4 Police or fire fighting facility;

233.5 Airport runway lights; or

233.6 Hospital or other medical emergency facility.

*(Adopted August 1, 2001)*

**9-8-234** **Best Available Control Technology (BACT)**: As defined in Regulation 2, Rule 2, Section 2-2-206

**9-8-235** **Dual Fuel Pilot Compression-Ignited Engine**: Any dual-fueled engine that uses diesel fuel as a pilot ignition source at an annual average ratio of less then 5 parts diesel fuel to 100 parts total fuel on an energy equivalent basis.

**9-8-236** **Portable:** Designed for and capable of being carried or moved from one location to another. Indications of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

**9-8-237** **Unforeseeable:** Not able to be reasonably anticipated and demonstrated by the owner or operator to the satisfaction of the APCO to have been beyond the reasonable control of the owner or operator. The enforcement of a contractual obligation the owner or operator has with a third party or any other party is foreseeable.

**9-8-300** **STANDARDS**

**9-8-301 Emission Limits - Spark-Ignited Engines Powered by Fossil Derived Fuels ~~Gas~~:** Effective January 1, 1997, a person shall not operate a stationary internal combustion engine fired exclusively on fossil derived fuels ~~gas~~, unless the following emission limits are met:

301.1 Rich-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 56 ppmv as corrected to 15% oxygen, dry basis. Effective January 1, 2012, nitrogen oxide (NOx) emissions shall not exceed 25 ppmv as corrected to 15% oxygen, dry basis.

301.2 Lean-Burn Engines: Nitrogen oxide (NOx) emissions shall not exceed 140 ppmv as corrected to 15% oxygen, dry basis. Effective January 1, 2012, nitrogen oxide (NOx) emissions shall not exceed 65 ppmv as corrected to 15% oxygen, dry basis.

301.3 Carbon monoxide (CO) emissions shall not exceed 2000 ppmv as corrected to 15% oxygen, dry basis.

**9-8-302 Emission Limits - Spark-Ignited Engines Powered by Waste Derived Fuels ~~Gas~~:** Effective January 1, 1997, a person shall not operate a spark-ignited stationary internal combustion engine fired on waste derived fuels ~~gas~~ or any combination of waste- and fossil-derived gaseous fuels and liquid fuels unless the following emission limits are met:

302.1 Lean-Burn Engines: Nitrogen oxide ($NO_x$) emissions shall not exceed 140 ppmv as corrected to 15% oxygen, dry basis. Effective January 1, 2012, nitrogen oxide (NOx) emissions shall not exceed 70 ppmv as corrected to 15% oxygen, dry basis.

302.2 Rich-Burn Engines: Nitrogen oxide ($NO_x$) emissions shall not exceed 210 ppmv as corrected to 15% oxygen, dry basis. Effective January 1, 2012, nitrogen oxide (NOx) emissions shall not exceed 70 ppmv as corrected to 15% oxygen, dry basis.

302.3 Carbon monoxide (CO) emissions shall not exceed 2000 ppmv as corrected to 15% oxygen, dry basis.

**9-8-303 Emissions Limits – Delayed Compliance, Existing Spark-Ignited Engines, 51 to 250 bhp or Model Year 1996 or Later:** In lieu of compliance with Section 9-8-301 or 302, a person may operate a stationary internal combustion, spark-ignited engine until January 1, 2016 provided:

303.1 The brake horsepower rating of the engine is between 51 and 250 bhp or the model year of the engine is 1996 or later;

303.2 The requirements of Section 9-8-402 are met;

303.3 The engine complies with Best Available Control Technology requirements for a stationary internal combustion, spark-ignited engines no later than January 1, 2016.

**9-8-304 Emission Limits – Compression-Ignited Engines:** Effective January 1, 2012, a person shall not operate a stationary internal combustion compression-ignited engine unless one the applicable emission limit in ppmv corrected 15% oxygen, dry basis set forth below for NOx and CO is met:

| | **Existing Compression-Ignited Engine** (bhp) | **Emission Standards** (ppmvd) | |
|---|---|---|---|
| | | **NOx** | **CO** |
| 304.1 | 51 to 175 | 180 | 440 |
| 304.2 | Greater than 175 | 110 | 310 |

**9-8-305 Emission Limits – Delayed Compliance, Existing Compression-Ignited Engines, Model Year 1996 or Later:** In lieu of compliance with Section 9-8-304, a person may operate a stationary internal combustion compression-ignited engine of model

year 1996 or later provided the requirements of Section 9-8-402 are met and one of the following conditions is met no later than January 1, 2016:

305.1 The NOx and CO emissions shall not exceed Best Available Control Technology limits for a stationary internal combustion, compression-ignited engines, or

305.2 the NOx emissions shall not exceed 22 ppmv corrected 15% oxygen, dry basis and the CO emissions shall not exceed 310 ppmv corrected 15% oxygen, dry basis.

**9-8-306 Requirements for Dual Fuel Pilot Compression-Ignited Engines:** Effective January 1, 2012, compression-ignited engines powered by diesel fuel and waste gas shall comply with spark-ignited waste-derived fuel emission limits in Section 9-8-302, provided the diesel fuel use does not exceed five percent on an energy basis of the total fuel consumption in any calendar year.

**9-8-330 Emergency Standby Engines, Hours of Operation:** A person may only operate an emergency standby engine under the following circumstances:

330.1 For emergency use for an unlimited number of hours; and

330.2 Until January 1, 2012, f~~F~~or reliability-related activities so long as total hours of operation for this purpose do not exceed 100 hours in a calendar year, or limitations contained in a District permit, whichever is lower.

330.3 Effective January 1, 2012, for reliability-related activities so long as total hours of operation for this purpose do not exceed 50 hours in a calendar year, or limitations contained in a District permit, whichever is lower. Hours of operation for reliability-related activities may exceed these limits only as necessary to comply with testing requirements of National Fire Protection Association (NFPA) 25 – "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition.

*(Adopted August 1, 2001)*

**9-8-331 Essential Public Service, Hours of Operation:** An essential public service may only operate an emergency standby engine under the following circumstances:

331.1 For emergency use for an unlimited number of hours; and

331.2 Until January 1, 2012, f~~F~~or reliability-related activities so long as total hours of operation for this purpose do not exceed 200 hours per calendar year, or limitations contained in a District permit, whichever is lower.

331.3 Effective January 1, 2012, for reliability-related activities so long as total hours of operation for this purpose do not exceed ~~50~~ 100 hours in a calendar year, or limitations contained in a District permit, whichever is lower.

*(Adopted August 1, 2001)*

**9-8-400 ADMINISTRATIVE REQUIREMENTS**

**9-8-401 Compliance Schedule:** A person subject to the requirements of Section 9-8-301, ~~or~~ 302, 303, 304, 305 or 306 shall submit an application for any Authority to Construct, necessary to achieve compliance with such requirements~~, by January 1, 1996 20, and be in compliance with all of the requirements of this rule by January 1, 1997~~ no later than one year prior to the applicable compliance date listed in Section 9-8-301, 302, 303, 304, 305 or 306.

**9-8-402 Reporting Requirements for Delayed Compliance:** A person opting to comply with one of the delayed compliance options set forth in Section 9-8-303 or 305 shall notify the APCO in writing no later than January 1, 2012 that the owner or operator of a stationary ~~spark-ignited~~ engine has elected to comply with requirements of Section 9-8-303 in lieu of Section 9-8-301 or 302, or to comply with the requirements of Section 9-8-305 in lieu of Section 9-8-304. The report shall include the following information about the engine: source number; plant number, name, contact, phone number, address; and engine make, model, model year, and size.

**9-8-500 MONITORING AND RECORDS**

**9-8-501** **Initial Demonstration of Compliance:** A person who must modify existing sources or install new control equipment shall conduct a District approved source test, pursuant to Sections 9-8-601 and 602 ~~by March 31, 1997, for the purpose of demonstrating compliance with Section 9-8-301 or 302. Source test results shall be submitted to the District by May 31, 1997;~~ according to the schedule listed in the following table:

| Engines Operated to Comply with Section | Date that the Initial Source Test Must Be Completed | Date that the Initial Source Test Results Must Be Submitted to the District |
|---|---|---|
| 9-8-301, 302, 304 or 306 | March 31, 2012 | May 31, 2012 |
| 9-8-303 or 305 | March 31, 2016 | May 31, 2016 |

**9-8-502** **Recordkeeping:** Any person who operates any engine subject to Section 9-8-300 shall comply with the following recordkeeping requirements:

502.1 Any person who operates any engine~~s which are~~ that is exempt from the requirements of Section 9-8-301, ~~or~~ 302, 303, or 304 by Section 9-8-110 or 111 shall keep records of the number of hours the engine~~s are~~ is fired on a monthly basis. Such records shall be retained for a minimum of 24 months from the date of entry and made available to District staff upon request.

502.2 Any person who operates a dual fuel pilot compression-ignited engines in accordance to Sections 9-8-306 shall keep records of fuel usage for each type of fuel used for a minimum of 24 months and make them available to the District staff upon request.

502.3 Any person who conducts either an initial demonstration of compliance according to Sections 9-8-501 and 9-8-601, 9-8-602, a quarterly demonstration of compliance according to Section 9-8-503, or an annual demonstration of compliance according to Sections 9-8-504 and 9-8-601 shall keep records of the compliance demonstration for a minimum of 24 months from the date of creation and made available to the District staff upon request.

502.4 Any person who operates an engine pursuant to Section 9-8-305 shall keep records verifying the certification of that engine for a minimum of 24 months.

**9-8-503** **Quarterly Demonstration of Compliance:** Any person who must comply with Section 9-8-301, 302, 303, 304, 305, or 306 shall use a portable analyzer to take NOx and CO emission readings to verify compliance with the applicable emission limits in Sections 9-8-301 through 305 at least once during each calendar quarter in which a source test is not performed. All emission readings shall be taken with the engine operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations. NOx emission readings taken pursuant to this section shall be averaged over a consecutive 15-minute period.

**9-8-530** **Emergency Standby and Low Usage Engines, Monitoring and Recordkeeping:** Each emergency standby and low usage engine shall be equipped with a non-resettable totalizing meter that measures hours of operation or fuel usage. All records shall be kept for at least two years, and shall be available for inspection by District staff upon request. The operator shall keep a monthly log of usage that shall indicate the following:

530.1 Hours of operation (total)

530.2 Hours of operation (emergency)

530.3 For each emergency, the nature of the emergency condition.

For low usage engines, these provisions become effective on January 1, 2012.

*(Adopted August 1, 2001)*

**9-8-600 MANUAL OF PROCEDURES**

**9-8-601 Determination of Nitrogen Oxides:** The methods by which samples of exhaust gases are collected and analyzed to determine concentrations of nitrogen oxides are set forth in the District's Manual of Procedures, Volume IV, ST-13 A ~~or B~~.

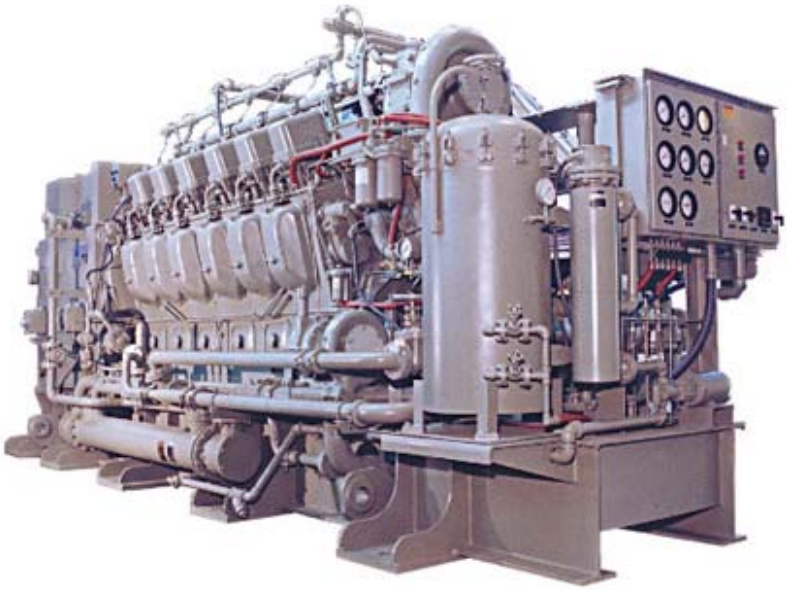
**9-8-602 Determination of Carbon Monoxide and Stack Gas Oxygen:** The methods by which samples of exhaust gases are collected and analyzed to determine concentrations of carbon monoxide and stack gas oxygen are set forth in the District's Manual of Procedures, Volume IV, ST-6 (carbon monoxide) and ST-14 (oxygen).

# Bay Area Air Quality Management District

**939 Ellis Street**
**San Francisco, California 94109**

# Staff Report

## BAAQMD Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines



**July 2007**

**Prepared By**

**Victor Douglas**
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**STAFF REPORT**
**Regulation 9, Rule 8, Nitrogen Oxides and Carbon Monoxide Emissions from Stationary Internal Combustion Engines**

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# I. EXECUTIVE SUMMARY

Currently, the Bay Area Air Quality Management District (District) does not attain the State air quality standards for particulate matter (PM) and ozone, and the California Air Resources Board (ARB) has determined that ozone and ozone precursors are sometimes transported from the Bay Area to neighboring air basins. Regulatory amendments to Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines (Rule 9-8) are part of the strategy to reduce PM and will also reduce ozone formation from emissions of oxides of nitrogen (NOx). Amendments to Rule 9-8 were identified in the District's Senate Bill (SB) 656 Particulate Matter Implementation Schedule. In addition, Further Study Measure 15 from the 2005 Ozone Strategy is a commitment to consider the feasibility of further reducing NOx emissions from stationary internal combustion (IC) engines.

## A. Stationary IC Engines and Their Emissions

Stationary IC engines are typically used as either primary or backup engines to generate electricity and power pumps and compressors. IC engines are fueled by diesel, natural gas and liquid petroleum gas (LPG), refinery fuel gas, digester gas and landfill gas. Over 80 percent of these engines are powered using diesel fuel.

All of these IC engines emit criteria pollutants such as NOx, PM and carbon monoxide (CO) as well as toxic pollutants. Diesel-fueled engines emit diesel PM – a subset of total PM that is identified as a toxic air contaminant. Bay Area stationary IC engines emit approximately 14.8 tons per day (tpd) of NOx; diesel-fueled engines are responsible for about 6.8 tpd of those emissions. Total PM emissions from stationary IC engines amount to 2.6 tpd; with primary (directly emitted) PM emissions being 0.8 tpd (the vast majority of primary PM emissions from stationary IC engines being attributable to diesel engines) and secondary PM emissions (due to NOx[i]) totaling about 1.8 tpd. CO emissions total approximately 5.1 tpd.

## B. The Current Rule

Rule 9-8 was originally adopted in 1993 and currently regulates emissions of NOx and CO from stationary IC engines of 250 bhp or greater powered by gaseous fuels such as natural gas or LPG. The current rule, however, does not include emissions limits for liquid-fueled engines such as diesel engines or engines below 250 bhp. The rule currently affects about 200 of the more than 5000 stationary IC engines within the District. The following table (Table 1)

[i] Secondary PM in the form of ammonia nitrate is formed from the photochemical reaction of NOx with ammonia.

summarizes the current NOx emission limits for gaseous-fueled IC engines of 250 bhp or greater.

**TABLE 1**
**Rule 9-8 Current Emissions Limits for NOx**

| Fuel Type | NOx Emission Limits (ppmv) | |
|---|---|---|
| | Rich Burn | Lean Burn |
| Fossil Fuels | 56 | 140 |
| Waste Gas | 210 | |

## C. Regulatory Activity Since the Adoption of Rule 9-8

Since the adoption of Rule 9-8 in 1993, several rules and regulations have been implemented that affect stationary IC engines in California.

The EPA NSPS for Off-Road Compression-Ignited Engines: In 1998 and 2004, the EPA promulgated the Off-Road Compression-Ignition (Diesel) Engine Tiered Standards.[1,2] These tiered standards are combined into what is currently the Standards of Performance for New Stationary Compression-Ignition Internal Combustion Engines (Off-Road CI Engine NSPS)[3]. These standards apply to new diesel engines and become progressively more stringent as model years advance.

The ARB BARCT Determinations: In 2001, ARB published best available retrofit control technology determinations (BARCT) for spark-ignited stationary IC engines.[4] The BARCT determinations set recommended NOx limits for the retrofit of stationary spark-ignited engines.

The ARB CI Engine ATCM: In addition, in 2004, ARB adopted the Airborne Toxic Control Measure for Compression-Ignition [Diesel] Engines (CI Engine ATCM) that sets emissions limits for PM and other criteria pollutants for diesel-fueled engines and requires the use of cleaner-burning fuels for all diesel engines.[5] The CI Engine ATCM will significantly affect stationary diesel engines in California. It will result in either the retrofit or the replacement of virtually all existing prime engines and the reduction of hours of operation for emergency standby engines by 2011.

Other California District Stationary IC Engine Regulations: Several air districts in the State have also adopted regulations that reflect emission limits for NOx contained in the ARB BARCT determinations and the EPA Off-Road CI Engine NSPS, including NOx limits for liquid-fueled engines.

## D. Proposed Amendments

The proposed amendments to Rule 9-8 are a further step towards reducing NOx and PM emissions from stationary internal combustion (IC) engines to the lowest feasible levels. Reducing NOx emissions would have the additional benefit of reducing secondary PM formation from NOx. The proposal would:

1. Expand the scope of the rule to regulate NOx emissions from smaller gaseous-fueled stationary IC engines that are larger than 50 brake horse power (bhp),
2. Regulate NOx emissions from liquid-fueled engines such as diesel engines, and
3. Reduce the emissions limits for NOx for all affected stationary IC engines.

Table 2 provides a summary of the NOx emissions limits and compliance schedule that District staff is proposing for incorporation into Rule 9-8. The NOx emissions limits are based on several federal, State, and California air district rules and regulations implemented since the 1993 adoption of Rule 9-8.

**TABLE 2**
**Summary of Proposed NOx Emission Limits for Existing Prime IC Engines**

| Engine Type and Fuel | Existing Engines | |
|---|---|---|
| | Emission Limits (ppmv, dry @ 15% $O_2$) | Compliance Dates |
| Compression-Ignited (All Engines 51 to 175 bhp) | 180 | January 2012 |
| Compression-Ignited (All Engines greater than 175 bhp) | 110 | January 2012 |
| Compression-Ignited (Alt. limits for 1996 or later) | 22 or BACT at time of compliance | January 2016 |
| Spark-Ignited: Gaseous & Liquid | 25 (rich[a]) 65 (lean[b]) | January 2012 |
| Spark-Ignited Waste Gas | 70 | January 2012 |
| Spark-Ignited (Alt. limits for 1996 or later or sized less than 250 bhp) | BACT at time of compliance | January 2016 |

a. Rich burn engines operate using an air to fuel ratio that is close to the stoichiometric balance (excess fuel); this combustion ratio results in a small fraction of the fuel remaining uncombusted and exiting in the exhaust stream.
b. Lean burn engines operate with excess air and can result in increased formation of NOx.

Some of the smaller engines in the 50 to 250 bhp size range utilize the waste heat for water and space heating, thereby improving the overall thermal

efficiency of the engine and reducing the need for additional energy usage for heating. Because these engines account for a small fraction of the total emissions and also because the engines are often operated by smaller facilities, the District proposes to allow these operators additional time to recoup the useful life of their engines and to prepare financially to replace these engines with ones that would meet stricter emissions levels at the time of replacement. As Table 2 indicates, these smaller engines (50-250 bhp) would be allowed the option of a January 2016 compliance date, provided the engines meet BACT emissions levels at the time of compliance.

The proposed amendments would reduce NOx emissions from stationary IC engines by 9.6 tpd, which is approximately a 65 percent emission reduction. Secondary PM emissions would be reduced by 1.2 tpd, which is about a 66 percent reduction.

A socioeconomic analysis of the proposed rule amendments concludes that they would not have significant socioeconomic impacts. An initial study of the proposed amendments concludes that there would not be significant adverse environmental impacts, and a California Environmental Quality Act (CEQA) Negative Declaration is proposed for the amendments.

In developing these amendments, staff consulted with various stakeholders, including operators at affected facilities, industry associations representing engine operators, engine manufacturers and distributors, other air districts, the ARB, and the EPA.

## II. BACKGROUND

Stationary IC engines directly emit NOx and PM emissions. The NOx emitted contributes to ozone formation and is also responsible for secondary PM formation. These engines also emit hydrocarbons (HC) and CO. Ozone is formed from the reaction of NOx and HC. The formation of particulate matter from NOx through chemical reactions is termed "secondary PM formation."[ii] Reducing NOx emissions would help to reduce secondary PM formation and also would help reduce ozone formation. Ozone, CO and PM are criteria pollutants that are subject to District and State regulation. Ozone can result in reduced lung function, increased respiratory symptoms, increased airway hyperreactivity, and increased airway inflammation. Emissions of VOCs also react in the atmosphere to form $PM_{10}$ and $PM_{2.5}$. Inhalation of $PM_{10}$ and $PM_{2.5}$ deep into the lungs reduces human pulmonary function.

[ii] The term "NOx" is use to collectively refer to nitric oxide (NO) and nitrogen dioxide ($NO_2$). Most NO, once emitted, reacts rapidly in the atmosphere to form $NO_2$. $NO_2$, in addition to reacting with HC to form ozone, reacts in the atmosphere to form PM – both $PM_{10}$ (ten microns ($\mu$m) or less in size) and $PM_{2.5}$ (2.5 $\mu$m or less).

The Bay Area is currently in attainment of the federal $PM_{10}$ standard; but, like most of the State, is designated as non-attainment for the State $PM_{10}$ and $PM_{2.5}$ standards. The Bay Area also is a non-attainment area for the State ozone standards. The Bay Area has not yet been designated for the new federal $PM_{2.5}$ standard. It is important to reduce the public's exposure to these compounds to minimize their adverse health effects. Further reducing NOx and PM emissions from stationary IC engines will help protect public health and comply with State law requiring that the region make progress in reducing ambient ozone and PM levels.

## A. What Are Stationary IC Engines?

IC engines generate power through an explosive combustion of an air/fuel mixture in an enclosed chamber. IC engines range in size from relatively small engines (less than 50 brake horsepower (bhp)) to extremely large engines (thousands of brake horsepower[6]) and are used primarily to generate electricity, operate pumps and compressors, and power water pumps for irrigation. There are two primary types of IC engines: compression-ignited (CI) and spark-ignited engines. All IC engines operate under one of three modes: rich burn (excess fuel), stoichiometric (a chemical balance between fuel and oxygen), or lean burn (excess air). Generally, uncontrolled engines that run rich emit higher levels of HC and CO, and lower levels of NOx and PM; while uncontrolled engines that run lean emit less HC and CO, and emit higher NOx and PM.

Compression-Ignited Engines: CI engines run lean (excess air) using diesel fuel or other longer-chained hydrocarbons, including fuel oil, distillate oil, or jet fuel. CI engines operate by compressing air, which increases the temperature of the air. (When a gas is compressed, both its pressure and temperature increase.) A diesel engine uses this property to ignite the air-fuel mixture and power the engine. The larger fraction of stationary IC engines in the District are CI engines, of which, diesel-fueled engines are the vast majority.

Spark-Ignited Engines: Another category of internal combustion engine is the spark-ignited engine. This term is normally used to refer to internal combustion engines where the air-fuel mixture is ignited with a spark. The term contrasts with CI engines, where the heat from compression alone ignites the mixture. Most spark-ignited engines burn fuels such as natural gas, propane, or waste gas (digester and landfill gases). Natural gas fired spark-ignited engines are the second largest category of stationary IC engines in the Bay Area. These engines operate as either rich-burn (excess fuel) or lean-burn (excess air).

## B. How Are Stationary IC Engines Categorized?

Stationary IC engines can be used as emergency standby engines, prime engines that operate more or less continuously, and low usage engines that operate only occasionally in non-emergency situations.

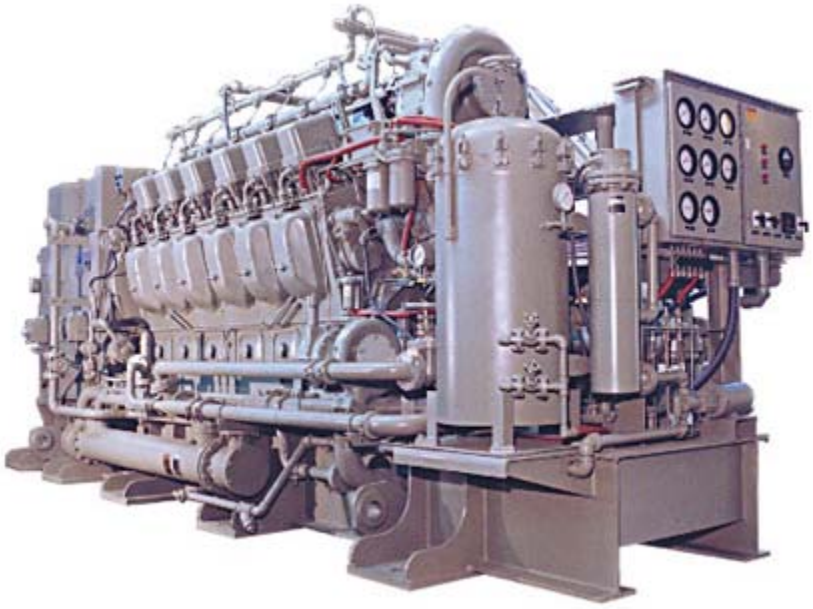
Emergency Standby Engines: Emergency standby engines are typically used for emergency back-up electric power generation or the emergency pumping of water. In the District, there are almost 4700 emergency standby engines ranging in size from less than 10 bhp to almost 4000 bhp. Currently, Rule 9-8 exempts these engines from emission standards, provided the annual hours of operation for reliability testing and maintenance do not exceed 100 hours. Emergency standby engines are fueled by both liquid and gaseous fuels.

Prime Engines: Prime engines are stationary engines that are not used in an emergency back-up or standby mode. There are approximately 400 prime engines within the District. These engines are used primarily to generate electricity, or to power compressors, pumps, cranes, generators, and grinders[7]. As with emergency and standby engines, prime engines are fueled by both liquid and gaseous fossil fuels. Prime engines may also be powered by waste, digester and landfill gases, which may require natural gas as a supplemental fuel.

Low Usage Engines: Low usage engines are prime engines that operate less than a hundred hours per year and are often used as non-emergency back up engines or for very limited purposes. There are 279 prime engines that currently operate less than 100 hours per year. This number is expected to increase once the proposal is implemented because one of the means of compliance is by limiting the operation of an engine to less than 100 hours per year.

Shown in Figure 1 is one of the largest diesel-fueled stationary IC engines for electrical generation. This engine can provide up to 2810 kilowatts (kW) of power (3766 bhp).

**FIGURE 1**
**Large-Size Stationary IC Engines for Electrical Generation**



Source: Fairbanks Morse

Figure 2 shows an engine typically used as an emergency standby engine and is approximately 50 bhp in size.

**FIGURE 2**
**Small-Size Emergency Standby Stationary IC Engine**


Source: Olympian

## C. What Is Prompting this Rulemaking?

PM and Senate Bill 656: In 2003 the California Legislature enacted Senate Bill 656 (SB 656, Sher), codified as Health and Safety Code (H&SC) section 39614,

to reduce public exposure to $PM_{10}$ and $PM_{2.5}$. SB 656 requires the ARB, in consultation with local air districts, to develop and adopt, by July 3, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be used by the ARB and the air districts to reduce $PM_{10}$ and $PM_{2.5}$. The goal of the legislation is to make progress toward attainment of State and federal $PM_{10}$ and $PM_{2.5}$ standards.

The listed control measures are to be based on rules, regulations, and programs existing in California as of January 1, 2004, to reduce emissions from new, modified, and existing stationary, area, and mobile sources. The bill requires ARB and air districts to adopt implementation schedules for appropriate ARB and air district measures. In the District's PM Implementation Schedule adopted pursuant to SB 656, the District identified amendments to Regulation 9, Rule 8 (Rule 9-8) as one of several measures to be considered to reduce PM levels in the Bay Area.[8] PM is of concern because it can enter nasal passages and the lungs and cause serious health effects such as aggravated asthma, nose and throat irritation, bronchitis, lung damage, and premature death. People with respiratory illnesses, children and the elderly are more sensitive to the effects of PM, but it can affect everyone.

Ozone Attainment: NOx also contributes to the formation of ozone, which is the principal component of smog. Ozone is highly reactive, and at high concentrations can be harmful to public health. Ozone forms when NOx chemically reacts with HC in the presence of sunlight. The health effects of ozone are well documented. It causes eye irritation and affects the respiratory system by irritating the mucous membranes in the nose and throat and lung tissue. Normal functioning of lungs is impaired, thus reducing the ability to perform physical exercise. These effects are more severe on people with chronic lung disease such as asthma and emphysema and on the very young, elderly, and athletes. The Bay Area Air Basin periodically experiences high ozone levels and is in non-attainment for the State one-hour and eight-hour air quality standards for ozone. Additionally, the ARB has determined that ozone and its precursors are sometimes transported from the Bay Area Air Basin into neighboring air basins. Accordingly, the Bay Area 2005 Ozone Strategy describes how the District will fulfill California Clean Air Act (CCAA) planning requirements for the State one-hour ozone standard, as well as transport mitigation requirements. Under Further Study Measure 15 in the 2005 Ozone Strategy, the District committed to evaluate whether further emission reductions from stationary IC engines were feasible.

Emissions from Stationary IC Engines: The District regulates NOx emissions from stationary IC engines under Rule 9-8, which imposes NOx limits on engines powered with gaseous fuels. Rule 9-8 was adopted in 1993 pursuant to the ARB pollution transport regulations (California Code of Regulations, section 70600, et seq.). Those regulations required the District to adopt best available retrofit control technology (BARCT) for source categories that collectively amounted to

75 percent of the 1987 NOx emissions inventory. Because the majority of IC engine emissions at the time came from approximately 60 large engines fired with gaseous fuels, Rule 9-8 imposed controls only on gaseous-fueled engines. Rule 9-8 set emissions limits for gaseous-fueled engines that became effective in 1997 and reduced NOx emissions from these engines by 8.3 tons per day (tpd)[9]. However, since the adoption of Rule 9-8, many more diesel-powered engines have come online in the Bay Area and now these engines account for a significant portion of the NOx emissions. Collectively, the total current inventory of NOx emissions from stationary engines in the Bay Area is estimated to be 14.8 tpd. The NOx emitted from stationary diesel engines is estimated to be 6.8 tpd, which is about 46 percent of the 14.8 tpd total. Total PM emissions from stationary IC engines amount to 2.6 tpd; with primary (directly emitted) PM emissions being 0.8 tpd (the vast majority of primary PM emissions from stationary IC engines being attributable to diesel engines). Secondary PM emissions (due to NOx) total about 1.8 tpd. CO emissions total approximately 5.1 tpd.

## D. Inventory of Engines

There are almost 5500 stationary internal combustion engines located within the District; of this amount, 5336 engines are larger than 50 bhp and are permitted by the District. These engines are powered by a variety of gaseous and liquid fuels including diesel, natural gas, LPG, digester gas, landfill gas, and gasoline. These fuels can be separated into three main categories: compression-ignited fuels, spark-ignited fossil fuels, and spark-ignited waste gases. Table 3 provides an inventory of the types of fuel used and the numbers of engines that are powered by each main fuel type.

**TABLE 3**
**Population of Stationary IC Engines by Use Category and Fuel***

| Fuel | Emergency Standby | Low Usage (≤ 100 hrs/yr) | Prime (>100 hrs/yr) | Totals |
|---|---|---|---|---|
| **Compression-Ignited Fuels:** Diesel, Bio-Diesel, Fuel Oil, Jet Fuel, Distillate Oil | 4312 | 263 | 135 | 4710 |
| **Spark-Ignited Fossil Fuels:** Natural Gas, CNG, LPG, Gasoline, Propane, Hydrogen | 329 | 16 | 178 | 523 |
| **Spark-Ignited Waste Gases:** Landfill Gas, Digester Gas, | 3 | 0 | 100 | 103 |
| **Totals** | **4644** | **279** | **413** | **5336** |

* Engines larger than 50 bhp.

Table 4 illustrates the variety of uses of the stationary IC engines and the populations of engines associated with each use category.

**TABLE 4**
**Population of Engines by Primary Use and Engine Type**

| Engine Use | Engine Type | | | |
|---|---|---|---|---|
| | **Emergency Standby** | **Low Usage** (≤ 100 hrs/yr) | **Prime** (>100 hrs/yr) | **Totals** |
| Electrical Generation | 4305 | 143 | 138 | 4586 |
| Co-Generation | 2 | 0 | 144 | 146 |
| Pump Driver | 47 | 2 | 2 | 51 |
| Fire Pump Driver | 48 | 0 | 0 | 48 |
| Process Heater | 6 | 0 | 2 | 8 |
| Testing | 3 | 0 | 2 | 5 |
| Space Heater | 4 | 0 | 1 | 5 |
| Waste Disposal | 0 | 0 | 3 | 3 |
| Compressor Driver | 0 | 1 | 1 | 2 |
| Other | 229 | 133 | 120 | 482 |
| **Totals** | **4644** | **279** | **413** | **5336** |

## III. CONTROL TECHNOLOGY

This section discusses the various emission reduction technologies available for stationary IC engines.

There are three primary approaches for emissions reduction control for stationary IC engines:

1. Combustion Modification
2. Fuel Switching
3. Post Combustion (Exhaust) Controls

Combustion modifications affect the way fuel is combusted or "burned." Some of these techniques include changing the air to fuel ratio, reducing the peak combustion temperature, shortening the residence time at high temperatures, or adjusting the ignition or injection timing. Fuel switching involves using another fuel that produces less NOx or PM, such as methanol or clean diesel fuel, which is mandated by the CI Engine ATCM. One of the primary means to treat NOx emissions after they are created (post combustion control) is either by chemically reacting the NOx with ammonia or urea in the presence of a catalyst to convert the NOx back into nitrogen or by using a noble metal catalyst that reduces NOx, CO and hydrocarbons. The first process is referred to as Selective Catalytic Reduction (SCR). The second process is referred to as Non-Selective Catalytic Reduction (NSCR). Another NOx reduction technology is called Selective, Non-

Catalytic Reduction (SNCR). It reduces NOx emissions without a catalyst by injecting urea and fuel into a heated muffler-sized reactor to reduce NOx into nitrogen gas.

Table 5 presents a summary of these various technologies that includes affected engine type, approximate effectiveness over uncontrolled emissions, cost estimates, and a general description.

## TABLE 5
## Summary of NOx Emission Control Technologies for Stationary IC Engines

| Control Technology | Engine Types | Compounds Affected | Effectiveness[a] | Capital Costs[b] | Description |
|---|---|---|---|---|---|
| Non-Selective Catalytic Reduction (NSCR) [4,6,10,11,12, 13] | Rich Burn & Stoich SI Engines | NOx, CO, HC | NOx: >98%<br>CO: >97%<br>HC: >80% | $50-200/bhp | **Exhaust Control:** Post combustion oxidation of HC & CO by $O_2$ and NOx over a catalyst (usually a noble metal like platinum, rhodium, or palladium). The HC & CO are converted to $CO_2$ and water, while the NOx is reduced to $N_2$. |
| Selective Catalytic Reduction (SCR)[4,6,10,11 ,12,13] | Lean Burn SI Engines | NOx, CO, HC | NOx: >95%<br>CO: >97%<br>HC: >80% | $135-510/bhp | **Exhaust Control:** Ammonia or urea injected in the exhaust before a catalyst. The HC & CO are converted to $CO_2$ and water, while the NOx is reduced to $N_2$. |
| Post Combustion Oxidation & Selective Non-Catalytic Reduction [6,10,11,14] | CI Engines SI Engines (Retrofits) | NOx, PM, CO, HC | NOx: >90%<br>PM: 60%<br>CO: <10 ppm | $30-155/bhp | **Exhaust Control:** NOxTECH Emission Control System<br>▪ Muffler-sized reactor (similar to afterburner)<br>▪ Non-Catalytic Oxidation of HC, PM, CO<br>▪ Exhaust heated to 1,400 to 1,550 $^{o}$F through fuel introduction to exhaust<br>▪ Urea injected to reduce NOx<br>▪ Ammonia Slip (2 ppm) |
| SCR with Diesel Particulate Filtration [4,6,10,15,16] | CI Engines | NOx, PM, CO, HC | NOx: 95%<br>(1.06 g/bhp-hr)<br>PM: 89% | $180-620/bhp | **Exhaust Control:** SINOx System is SCR combined with a diesel particulate filter.<br>▪ Aqueous urea injected<br>▪ Ammonia slip: 4.4 ppm with 30 ppm spikes |
| Lean + Derating[10] | SI Engine | NOx, HC, CO | NOx: >80% | n/a | **Combustion Control:** Increase the air-to-fuel ratio toward lean and derate, or decrease the cylinder pressures and temperature which reduces the power output of an engine. The lower pressure and temperature reduces NOx, but may increase HC & CO. |
| Pre-Stratified Charge[10,16] | SI Engines | NOx | NOx: >80% | $1250-1825/bhp | **Combustion Control:** Small amounts of air are introduced to the intake manifold create sequential fuel-rich and fuel-lean zones. This provides both a fuel-rich ignition zone and rapid flame cooling in the fuel-lean zone. This reduces NOx. |
| Low-Emission Combustion[10] | SI Engines | NOx | NOx: >80% | $285/bhp | **Combustion Control:** Lean Burn combined with:<br>▪ precombustion chamber,<br>▪ ignition system improvement,<br>▪ turbocharging,<br>▪ air/fuel ratio controller |

| Control Technology | Engine Types | Compounds Affected | Effectiveness[a] | Capital Costs[b] | Description |
|---|---|---|---|---|---|
| "Clean Burn" Retrofit[4,6,10] | SI Engines | NOx, HC, CO | NOx: >80%<br>CO: 60%<br>HC: 60% | $145-320/bhp | **Combustion Control:**<br>▪ After-market retrofit kit to allow extremely lean burn without fuel consumption penalties.<br>▪ Smaller Engines: cylinder redesigned for thorough mixing<br>▪ Larger Engines: 2 combustion chambers: main chamber & precombustion chamber.<br>▪ Prechamber: spark ignition, Rich fuel mix<br>▪ Main chamber: Lean fuel mix<br>▪ Reduced temp because 1) Rich ignition mixture, 2) heat transfer loss as combustion proceeds, 3) dilution effect of lean mix.<br>▪ Replace engine head with new heads, or work with existing head with prechamber fitting into spark plug hole.<br>▪ Modified spark plug instead of separate chamber with small, built-in fuel nozzle which injects fuel toward the spark plug electrode. |
| Lean + "Clean Burn" Retrofit[6,10] | SI Engines | NOx, HC, CO | NOx: 80% | $13-25/bhp | **Combustion Control:** A combination of excess air and Clean Burn Retrofit. |
| Fuel Switching (Methanol)[4,10] | Natural Gas Engines | NOx | NOx: 30% | $1200/engine | **Fuel Switching:** Replacing or converting natural gas engines with methanol-fueled engines. |

a. Effectiveness is based on a comparison of controlled to uncontrolled emissions.
b. Cost estimates reflect capital costs that were adjusted to May 2007 dollars using U.S. Department of Labor Bureau of Labor Statistics, Consumer Price Indices.

## IV. PROPOSED REGULATORY AMENDMENTS

### A. Background

On November 15, 2001, ARB approved the Guidance for the Permitting of Electrical Generation Technologies.[16] This document was developed to provide assistance to districts in making permitting decisions for electrical generation technologies. The document provides ARB staff evaluation of recent BACT determinations for electrical generation, including reciprocating engines.

ARB staff also released the Determination of Reasonably Available Control Technology (RACT) and Best Available Retrofit Control Technology (BARCT) for Stationary Spark-Ignited Internal Combustion Engines.[4]

The United State Environmental Protection Agency (EPA) promulgated non-methane hydrocarbon (NMHC), NOx, CO and PM emissions limits for off-road compression-ignition (diesel) engines in 1998 and 2004. These standards are collectively known as the EPA Off-Road Compression-Ignition New Source Performance Standards or Off-Road CI Engine NSPS. Table 6 provides the ranges of NOx emission limits for each of the four tiers and the number of engines in the Bay Area that fall within each Tier group; the tiers and emission limits vary with the engine model year and engine size.

**TABLE 6**
**Summary of the Off-Road CI Engine NSPS NOx Emissions Standards and Associated Populations of Diesel Engines**

| Tier Level | Model Years | Range NOx Emission Limits (g/bhp-hr) | Number of Diesel Engines Identified ≥ 50 bhp |
|---|---|---|---|
| Tier 1 | 1995-2005 | 6.7 | 4217 |
| Tier 2 | 2001-2010 | 4.7 – 5.6* | 559 |
| Tier 3 | 2006-2011 | 3.0 – 4.7* | 0 |
| Tier 4 Interim | 2008-2015 | 0.5 – 2.6 | 0 |
| Tier 4 Final | 2013-2016+ | 0.3 – 0.5 | 0 |
| | | **Total** | **4710** |

* Limits represent a combination of NMHC and NOx emissions.

The Off-Road CI Engine NSPS are incorporated into the California Off-Road Certification Standards (Title 13 CCR section 2423). The Off-Road Standards form the basis for the emission limits in the ARB CI Engine ATCM, which regulates PM and other criteria pollutant emissions from stationary diesel engines in California.

In 2004, ARB adopted the CI Engine ATCM. The primary purpose of the CI Engine ATCM is to reduce PM emissions from diesel engines greater than 50 bhp. The ATCM affects both emergency standby engines and prime use engines. The ATCM establishes emissions standards for diesel PM emissions, that sellers of new stationary diesel-fueled (compression-ignition) engines must meet. The ATCM also sets emissions standards and operational requirements for existing stationary CI engines. The measure requires that specific classes of CI engines meet the off-road engine standards in Title 13, California Code of Regulations. These standards, as mentioned above, are based on the EPA Off-Road CI Engine NSPS.

The CI Engine ATCM will significantly affect all stationary diesel engines in the District greater than 50 bhp. The staff report that accompanied the proposed CI Engine ATCM and ARB staff indicate that most of the existing prime diesel engines will have to be either replaced or retrofitted to meet the PM emission limit of 0.01 g/bhp-hr[17,18]. This means that, of the 4710 stationary diesel engines in the District (4312 emergency standby and 398 prime or low usage engines), just under 400 prime engines will have to be replaced or retrofitted to comply with the CI Engine ATCM. The remaining 4312 emergency standby engines will either have to reduce the allowed maximum hours of non-emergency operation to less than 20 hours per year or comply with one of the PM emissions limits listed in the ATCM. All engines must be in compliance with the ATCM no later than July 2011, with earlier compliance dates for specific engine/use categories.

Since the Rule 9-8 was adopted in 1993, several air districts – San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD), the South Coast Air Quality Management District (South Coast AQMD), and Ventura County Air Pollution Control District (Ventura County APCD) – have adopted more stringent standards for IC engines. These standards reflect the EPA off-road tiered standards for CI engines and the ARB BARCT determination for stationary spark-ignited engines.

## B. Proposed Amendments

The proposed amendments would change the current rule in three primary ways. First, the emission limits in Rule 9-8 would be expanded to apply to IC engines in the range of 50 to 250 bhp. Currently, emission limits of the rule apply only to engines of 250 bhp or more. Second, the amendments propose to include liquid-fueled engines, such as diesel-fired engines. The emission limits of the rule currently only apply to gaseous-fueled engines, which are primarily natural gas- and LPG-fueled engines. Finally, the NOx emissions limits would be reduced to reflect the most stringent limits achievable in the State. These proposed changes would become effective January 1, 2012.

The proposed amendments reflect emission limits achievable with the most stringent demonstrated retrofit control technology available for spark-ignited and compression-ignited engines greater than 50 bhp:

1. Non-selective catalytic reduction (NSCR) and air-to-fuel ratio controller for rich-burn spark-ignited engines,
2. Selective catalytic reduction (SCR) for lean-burn spark-ignited engines and compression-ignited engines, and
3. Selective non-catalytic reduction (SNCR), extra lean burn conversion, or pre-stratified charge (PSC) for waste-fueled engines.

The proposed amendments would also incorporate the more stringent future-effective EPA standards for diesel engines.

The proposal would allow operators of existing prime spark-ignited engines to either:

1. Comply with the reduced emission limits for NOx by 2009; or
2. Comply with the future BACT standards for NOx and CO by 2016, provided the engine model year is 1996 or later.

The CO limits of the rule remain unchanged for spark-ignited engines; however, diesel engines would be subject to the CO levels that are provided below.

Similarly, operators of existing prime diesel engines would either:

1. Comply with NOx emission limits that range between 110 ppmv (2.5 g/bhp-hr) and 180 ppmv (3.7 g/bhp-hr) and CO emission limits that range between 310 ppmv (2.6 g/bhp-hr) and 440 ppmv (3.7 g/bhp-hr); or
2. Comply with either the EPA Final Tier 4 Standards for NOx and CO or the future BACT standard for NOx and CO by 2016 provided the engine model year is 1996 or later.

No limit is proposed on the number of hours an engine can be used in an emergency. Emergency standby engines would be exempt from the proposed emissions limits as long as reliability-related activities were limited to 50 hours per year. Low usage engines that operate no more than 100 hours for non-emergency use in a 12-month period are also exempt from the emission limits of the rule. These engines can also operate under emergency use circumstances; however, the hours of emergency use must be documented.

Because compression-ignited engines generally have long operating lives (10 to 20 years[17]), without this proposal there is the possibility that facilities could operate diesel engines that emit higher levels of NOx for many years to come. This is because the primary focus of the ATCM is PM emission reduction and it allows NOx emissions from diesel engines to remain at current levels. Requiring compliance with the NOx and CO emission levels by 2012 would allow operators replacing or retrofitting compression-ignited engines for compliance with PM

standards in the CI Engine ATCM to comply with both regulations on the same schedule.

The proposed amendments would allow the operators of compression-ignited engines of model year 1996 or newer until 2016 to comply with the alternative emissions limits of the rule. The final Tiered standards of the Off-Road NSPS for NOx and CO take effect beginning in 2013[iii]. This extra time would provide an opportunity for the operators of more recently purchased engines to recoup most of the useful operating life of their diesel engines. Engines capable of meeting the Tier 4 final standards (0.3 g/bhp-hr (22 ppm) or less for engines of 75 bhp or greater) are not currently available[19]; however, engine manufactures are working to develop such technology.[iv] If no technology is available at the future effective compliance date, the operators would be required to comply with the best available control technology (BACT) requirements of that time. No later than January 1, 2012, the operators of these engines would need to report to the District their intent to comply with the delayed compliance standards that become effective January 1, 2016.

Operators of newer spark-ignited engines could also elect to be subject to a later compliance date. Operators of prime spark-ignited engines with a size rating between 50 and 250 bhp or engines of model year 1996 or newer would be allowed until 2016 to comply, provided the engines meet the BACT requirements in place for spark-ignited engines at the time of compliance. No later than January 1, 2012, the operators would need to report to the District their intent to comply with the compliance standards that become effective January 1, 2016. Once the initial compliance dates listed in Table 7 have passed, all engines that have not taken steps to comply with those initial emission limits would be required to comply with the BACT limits by January 1, 2016.

Prime spark-ignited engines in the range of 50 to 250 bhp account for about 29 percent of the prime spark-ignited engine population; however, these engines account for only 2.3 percent of the NOx emissions. Many of these smaller engines are often operated by facilities such as schools, retirement and nursing homes, and athletic facilities and are currently exempt from the emissions limits of the rule.

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[iii] Tier 4 Final NOx emission standards initially take effect for engines sizes of 50 to 75 bhp beginning with the 2013 model year; however, these limits are equivalent to the Tier 3 and Tier 4 Interim emission limits for larger sized engines (50 to 100 bhp) for which there is technology currently available to meet these limits. The standards are for NMHC and NOx combined.

[iv] It should be noted that this potential issue only affects engines of operators who chose to comply with the above alternative compliance option. If, at the time the provision would take effect, there is still not technology available to meet the final Tiered standard, the engine would have to comply with the most stringent NOx standards available at that time, which would be best available control technology or BACT.

Some IC engines are combined heat and power (CHP) units. CHP units utilize the waste exhaust heat for water or space heating, in addition to generating electricity. These CHP units, which are typically in the 75 to 125 bhp size range, meet the requirements of the California Distributed Generation Program.[20] Because the heat recovery process is engineered directly into the units, retrofitting them with emissions control would result in a loss of a significant portion, if not all, of the heat recovery capabilities of the CHP units. Consequently, the heating capacity would have to be provided by outside power, producing more emissions elsewhere. In consideration of this, the proposed amendments allow operators of these, and other small engines, the option of additional time to comply to utilize most of the useful life and to recoup the capital cost of these engines. New CHP units are equipped with catalytic controls that will meet the standards in the proposed amendments.

The proposed emissions limits for stationary IC engines of 50 bhp or greater are summarized in Table 7.

**TABLE 7**
**Summary of Proposed NOx Emission Limits for Existing Stationary IC Engines[a]**

| Engine Fuel Type | NOx Emission Limits (ppmv, dry @ 15% $O_2$) | Compliance Dates |
|---|---|---|
| Compression-Ignited[b] (All Engines 51 to 175 bhp) | 180 | January 2012 |
| Compression-Ignited[b] (All Engines greater than 175 bhp) | 110 | January 2012 |
| Compression-Ignited[c,d] (1996 or later model year compliance option) | 22 or BACT at time of compliance | January 2016 |
| Spark-Ignited[e] Fossil Fuels | 25 (rich)<br>65 (lean) | January 2012 |
| Spark-Ignited[e] Waste Gas | 70 | January 2012 |
| Spark-Ignited (1996 or later model year or engines less than 250 bhp compliance option) | BACT at time of compliance | January 2016 |

a. Engines 50 bhp or greater in size.
b. Federal off-road Tier 4 Interim NOx emissions standards for compression ignition engines.
c. Alternative compliance option only for diesel engines of model year 1996 or later.
d. Federal off-road Tier 4 Final NOx emissions standards for compression ignition engines.
e. The California Air Resources Board (ARB) Determination of Reasonably Available Control Technology and Best Available Control Technology for Stationary Spark-Ignited Internal Combustion Engines.

The proposed amendments do not require a reduction in CO emission limits, although new engines frequently have more stringent CO standards included in the permit conditions. The District attains federal and State CO standards.

## V. EMISSIONS AND EMISSIONS REDUCTIONS

Staff developed baseline emissions inventories for both NOx and PM for all stationary IC engines by categorizing each engine by ignition and fuel type. Compression-ignited engines are fueled by diesel or fuel oil. Whereas spark ignited engines are fueled by gaseous fuels, such as natural gas, LPG, digester gas, landfill gas or propane, or liquid fuels, such as gasoline. The inventory was categorized by: 1) compression-ignited engines; 2) fossil-fueled, spark-ignited engines; and 3) waste gas-fueled, spark-ignited engines.

### A. NOx Emissions

Stationary IC engines in the District emit 14.8 tons of NOx per day. District Regulation 2, Rule 1 was amended on May 17, 2000, to require stationary IC engines greater than 50 bhp to be permitted. Staff reviewed the database of permitted IC engines to identify all stationary IC engines affected by Rule 9-8. To develop the emission inventory, staff first applied the appropriate BACT emission limit for NOx[21] to all IC engines identified as being equipped with BACT. Then the applicable EPA off-road emissions standards for compression ignition engines were applied to all non BACT-equipped diesel-fueled engines. The NOx emission estimate for natural gas- or other gaseous fuel-powered engines (non-BACT equipped) was based on the applicable emission limits currently found in Rule 9-8.

Table 8 summarizes the NOx emissions for stationary IC engines located within the District. Diesel-powered engines (which are currently unregulated by Rule 9-8) account for about 46 percent of the total NOx emissions from stationary IC engines. Prime engines account for about 78 percent of the total NOx emissions from stationary IC engines.

**TABLE 8**
**NOx Emissions by Fuel and Engine Type**
(tons/day)

| Fuel | Emergency Standby* | Low Usage (≤ 100 hrs/yr) | Prime (>100 hrs/yr) | Totals |
|---|---|---|---|---|
| Diesel, Fuel Oil, Jet Fuel | 3.1 | 0.07 | 3.6 | 6.8 |
| Natural Gas & other fossil fuels | 0.04 | 0 | 2.4 | 2.4 |
| Waste Gas | 0 | 0 | 5.6 | 5.6 |
| **Totals** | **3.14** | **0.07** | **11.6** | **14.8** |

* Based on maximum allowed hours of operation in the District permits.

Table 9 presents a summary of the average daily NOx emissions per engine for each type of engine. This summary indicates that prime engines (on an engine-by-engine basis) are the largest contributor to NOx emissions. Emergency standby and low usage engines, due to their infrequent use, account for relatively small amounts of NOx emissions.

**TABLE 9**
**Average NOx Emissions per Engine by Engine Type**

| | Engine Type | | | |
|---|---|---|---|---|
| | Emergency Standby* | Low Usage (≤ 100 hrs/yr) | Prime (>100 hrs/yr) | All Engines |
| **Engine Counts** | 4644 | 279 | 413 | 5336 |
| **Average Emissions** (lbs/day) | 1.4 | 0.5 | 55.7 | 5.5 |

* Based on maximum allowed hours of operation in the District permits.

Although prime engines that operate more than 100 hours per year are the largest contributors, Table 8 and Table 9 indicate that emergency standby engines, collectively, contribute significantly to the total NOx inventory.

## B. PM Emissions

Stationary IC engines in the District emit 2.6 tons of particulate matter per day. Of these emissions, 0.8 tons are primary PM emissions, which means they are emitted directly[v]. The primary emissions inventory for PM was estimated using various emissions factors (AP 42 for non-diesel engines) and emissions limits

[v] The primary PM emissions from stationary IC engines are overwhelmingly due to diesel exhaust, with primary PM emissions from spark-ignited engines being less than 0.1 percent of the total PM emissions from these engines.

based on State and federal regulations (the CI Engine ATCM for diesel engines, Tiers 1 & 2 of the EPA Off-Road CI Engine NSPS). Staff estimates that the ATCM will reduce about 94 percent of the primary diesel PM emissions. The remaining 1.8 tons are due to secondary PM formation from NOx emissions. Secondary PM is formed from the conversion of NOx to ammonium nitrate ($NH_4NO_3$). District staff has estimated the ratio between $NH_4NO_3$ formation to NOx emissions in the Bay Area to range between 1:6 and 1:10.[22] The PM emissions inventory shown in Table 10 presents an inventory of secondary PM emissions. For this table, staff used a ratio of 1:8 for $NH_4NO_3$ formation to NOx emissions.

**TABLE 10**
**Secondary PM Emissions by Fuel and Engine Type**
(tons/day)

| **Fuel** | **Emergency Standby** | **Low Usage** (≤ 100 hr) | **Prime** (> 100 hr) | **Totals** |
|---|---|---|---|---|
| Diesel, Fuel Oil, Jet Fuel | 0.39 | 0.01 | 0.45 | 0.85 |
| Natural Gas & other fossil fuels | 0 | 0 | 0.30 | 0.30 |
| Waste Gas | 0 | 0 | 0.69 | 0.69 |
| **Totals** | **0.4** | **0.01** | **1.44** | **1.84** |

Table 11 presents a summary of the average daily secondary PM emissions per engine for each type of engine. This summary indicates that prime engines (on an engine-by-engine basis) are the largest contributor to PM emissions (as is the case for NOx emissions). Of prime engines the greatest contributors are engines that operate more than 100 hours per year.

**TABLE 11**
**Average Secondary PM Emissions per Engine by Engine Type**

| | **Engine Type** | | | |
|---|---|---|---|---|
| | **Emergency Standby** (lbs/day) | **Low Usage** ≤ 100 hrs/yr (lbs/day) | **Prime** > 100 hrs/yr (lbs/day) | **All Engines** (lbs/day) |
| **Engine Counts** | 4644 | 279 | 413 | 5336 |
| **Average Emissions** (lbs/day) | 0.17 | 0.07 | 6.8 | 0.71 |

## C. NOx Emission Reductions

The proposed amendments would reduce NOx emissions by 9.6 tpd. The emissions reductions presented in this section are based on the estimated

differences in emissions from the application of the current version of Rule 9-8 and the proposed amendments.

It should be noted that the air-to-fuel ratios of most of the spark-ignited engines were not listed in the database. From the fraction of engines with rich or lean burn designations listed in the database and discussions with District permit staff and staff from other air districts,[23,24,25] a ratio of 80:20 was assumed for the ratio of rich-burn to lean-burn engines. Emission limits for both rich burn and lean burn engines were applied to all spark-ignited engines and the resulting emission totals weighted accordingly (rich burn, 80 percent and lean burn, 20 percent). Further, staff assumed an overall engine loading factor of 70 percent; engines loads listed in the database ranged between 50 to 80 percent.

The category of emergency standby engines includes both emergency standby and essential service engines. The proposed amendments would reduce the allowable hours of non-emergency or non-essential use from 200 for essential service engines and 100 for emergency standby engines to 50 for the category of engines. The emission reductions are based on a reduction in service hours.

Table 12 presents estimates of total NOx emission reductions and the percent reductions that would be expected from the implementation of the proposal.

**TABLE 12**
**NOx Emissions by Fuel Used and Engine Type for the Current and Proposed Amendments to Rule 9-8**

| Fuel Type | Engine Type | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Emergency Standby* (tpd) | | Low Usage (tpd) | | Prime (tpd) | | All Engines (tpd) | |
| | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions |
| Diesel, Fuel Oil, Jet Fuel | 3.1 | 1.4 | 0.07 | 0 | 3.6 | 2.8 | 6.8 | 4.2 |
| Spark-Ignited Fossil Fuels | 0.04 | 0.01 | 0 | 0 | 2.4 | 1.6 | 2.4 | 1.6 |
| Spark-Ignited Waste Fuels | 0 | 0 | 0 | 0 | 5.6 | 3.8 | 5.6 | 3.8 |
| **Emissions Totals** | **3.1** | **1.4** | **0.07** | **0** | **11.6** | **8.2** | **14.8** | **9.6** |
| **Percent Reductions** | **45%** | | **0%** | | **71%** | | **65%** | |

* Emissions from non-emergency or non-essential use.

## D. PM Emission Reductions

This proposal will reduce secondary PM emissions by 1.2 tons per day through the reduction of NOx emissions. The implementation of the CI Engine ATCM will reduce primary PM emissions from CI engines by over 94 percent (0.75 tpd). PM emission reduction estimates due to this proposal are wholly attributable to the reduction of secondary formation of PM from NOx emissions. This is because the proposal does not directly impact primary PM emissions from spark-ignited engines. Table 13 presents estimates of total current and expected PM emissions and the percent reductions that would be expected from the implementation of the proposal.

**TABLE 13**
**PM Emissions by Fuel Used and Engine Type for the Current and Proposed Amendments to Rule 9-8**

| Fuel Type | Engine Type | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Emergency Standby (tpd) | | Low Usage (tpd) | | Prime (tpd) | | All Engines (tpd) | |
| | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions |
| Diesel, Fuel Oil, Jet Fuel | 0.39 | 0.11 | 0.01 | 0 | 0.45 | 0.39 | 0.85 | 0.53 |
| Spark-Ignited Fossil Fuels | 0 | 0 | 0 | 0 | 0.30 | 0.20 | 0.30 | 0.20 |
| Spark-Ignited Waste Fuels | 0 | 0 | 0 | 0 | 0.69 | 0.48 | 0.69 | 0.48 |
| **Emissions Totals** | **0.39** | **0.11** | **0.01** | **0** | **1.44** | **1.07** | **1.84** | **1.21** |
| **Percent Reductions** | **27%** | | **0%** | | **74%** | | **66%** | |

## E. Emissions from Agricultural Equipment

Stationary IC engines are sometimes used in agricultural operations, primarily diesel engines used as water pumps in remote locations. These engines are currently exempt from Rule 9-8, do not have District permits, and their emissions are not included in the above estimates. Based on ARB data, emissions from stationary agricultural engines in the Bay Area total 0.076 ton per day of NOx and 0.01 tons per day of PM. Because the emissions from these engines are low, agricultural engines are not impacted by the proposed amendments.

## VI. ECONOMIC IMPACTS

The potential cost estimates presented in this section were based on compliance through the application of either:

1. Non-selective catalytic reduction (NSCR) technology to rich-burning spark-ignited engines combined with air-fuel ratio controller (AFRC); or
2. Selective catalytic reduction (SCR) technology to compression-ignited and lean-burning spark-ignited engines; or
3. Selective Non-Catalytic Reduction (SNCR) for lean-burn waste gas-fired engines.

Table 14 provides a summary of the estimated capital and operating costs for NSCR + AFRC, SCR and SNCR systems.

**TABLE 14**
**Approximate Cost Estimates per Brake Horsepower for Non-Selective Catalytic Reduction and Air-Fuel Ratio Controller, Selective Catalytic Reduction and Selective Non-Catalytic Reduction [4, 13, 24, 26, 27, 28]**

| Engine Size | NSCR + AFRC | | SCR | | SNCR | |
|---|---|---|---|---|---|---|
| (bhp) | Capital | Operating | Capital | Operating | Capital | Operating |
| 50-150 | $200 | $6 | $510 | $9.10 | $155 | $11.50 |
| 151-300 | $120 | $7 | $225 | $11.50 | $120 | $7.80 |
| 301-500 | $75 | $6 | $170 | $15.40 | $85 | $5.80 |
| 501-1000 | $55 | $7 | $225 | $25.30 | $55 | $3.80 |
| 1001-2000 | $50 | $5 | $170 | $29.40 | $40 | $2.80 |
| > 2000 | $50 | $3 | $135 | $55.70 | $30 | $2.30 |

To develop the cost estimates, staff assumed a worse case cost scenario in which all affected engines would have to be retrofitted with NSCR, SCR or SNCR to meet the emissions limits.[vi] Emergency standby engines were assumed to comply by a reduction of non-emergency operating hours (reliability testing), which should result in a cost savings. (However, the cost estimates do not account for any potential savings.) Engines currently equipped with BACT were assumed to be able to meet the emission limits of the proposal and, therefore, would not incur any cost. The capital costs were amortized over ten years at seven percent annual interest.

[vi] Many IC engines in the Bay Area may already be equipped with control technology that may be capable of meeting the emission limits of the proposal and, therefore, would not have to incur the cost of installing additional retrofit control technology.

## A. Cost Effectiveness

The emissions, emission reductions, compliance costs and cost effectiveness for diesel, fossil-fuel and waste gas-fired spark-ignited engines are listed in Tables 15 through 17. The costs contained in Table 15 reflect only the capital cost, cost of installation and cost of operation of SCR on prime diesel engines. The costs do not account for the potential cost of compliance with the CI Engine ATCM, which would most likely result in the replacement or retrofit (with diesel particulate filters) of all prime diesel engines. Because the owners of diesel engines would have to comply with the ATCM independently of Rule 9-8 through replacement or retrofit, those costs are not included in the cost analysis for this proposal.

## TABLE 15
## NOx Emissions Reductions and Cost Analyses for Compression-Ignited Engines (Diesel)

| Engine Sizes[a] (bhp) | Total / Affected[b] Engines | Current NOx Emissions (tons/day) | Proposal NOx Emissions (tons/day) | NOx Emission Reductions (tons/day) | Annualized Quarterly Monitoring Costs | Annualized Capital Cost | Annualized Operating Cost | Total Annualized Costs | Cost Effective-ness ($/ton) |
|---|---|---|---|---|---|---|---|---|---|
| 51-150 | 36 / 34 | 0.09 | 0.04 | 0.04 | $47,396 | $272,043 | $30,530 | $349,969 | $26,180 |
| 151-300 | 37 / 32 | 0.13 | 0.04 | 0.10 | $44,608 | $256,041 | $78,633 | $379,282 | $10,754 |
| 301-500 | 25 / 15 | 0.22 | 0.06 | 0.17 | $20,910 | $160,027 | $108,273 | $289,210 | $4,543 |
| 501-1000 | 26 / 15 | 0.62 | 0.15 | 0.49 | $20,910 | $397,403 | $292,936 | $711,249 | $4,007 |
| 1001-2000 | 4 / 3 | 0.25 | 0.06 | 0.20 | $4,182 | $101,715 | $117,979 | $223,876 | $3,096 |
| < 2001 | 6 / 6 | 2.27 | 0.49 | 1.78 | $8,364 | $243,672 | $1,007,083 | $1,259,119 | $1,942 |
| **Totals** | **134 / 105** | **3.6** | **0.8** | **2.8** | **$146,370** | **$1,430,901** | **$1,635,434** | **$3,212,705** | **$3,180** |

a. Prime engines that operate more than 100 hours per year.
b. Engines that were not subject to BACT requirements at the time of installation.

## TABLE 16
## NOx Emissions Reductions and Cost Analyses for Spark-Ignited, Fossil-Fueled Engines (Natural Gas, LPG, Propane, Gasoline, etc.)

| Engine Sizes[a] (bhp) | Total / Affected[b] Engines | Current NOx Emissions (tons/day) | Proposal NOx Emissions (tons/day) | NOx Emission Reductions (tons/day) | Annualized Quarterly Monitoring Costs | Annualized Capital Cost | Annualized Operating Cost | Total Annualized Costs | Cost Effective-ness ($/ton) |
|---|---|---|---|---|---|---|---|---|---|
| 51-150 | 44 / 35 | 0.5 | 0.0 | 0.50 | $48,790 | $130,551 | $52,624 | $231,965 | $1,279 |
| 151-300 | 43 / 42 | 0.6 | 0.1 | 0.49 | $58,548 | $195,992 | $172,387 | $426,927 | $2,375 |
| 301-500 | 9 / 8 | 0.0 | 0.0 | 0.02 | $11,152 | $41,898 | $42,539 | $95,590 | $13,288 |
| 501-1000 | 46 / 25 | 0.3 | 0.2 | 0.14 | $34,850 | $236,164 | $283,722 | $554,735 | $10,839 |
| 1001-2000 | 24 / 10 | 0.3 | 0.2 | 0.15 | $13,940 | $148,256 | $254,850 | $417,046 | $7,587 |
| < 2001 | 18 / 14 | 0.7 | 0.3 | 0.34 | $19,516 | $326,827 | $502,135 | $848,478 | $6,934 |
| **Totals** | **184 / 134** | **2.4** | **0.8** | **1.6** | **$186,796** | **$1,079,688** | **$1,308,257** | **$2,574,742** | **$4,314** |

a. Prime engines that operate more than 100 hours per year.
b. Engines that were not subject to BACT requirements at the time of installation.

**TABLE 17**
**NOx Emissions Reductions and Cost Analyses for**
**Spark-Ignited, Waste-Fueled Engines (Digester and Landfill Gases)**

| **Engine Sizes**[a] (bhp) | **Total / Affected**[b] **Engines** | **Current NOx Emissions** (tons/day) | **Proposal NOx Emissions** (tons/day) | **NOx Emission Reductions** (tons/day) | **Annualized Quarterly Monitoring Costs** | **Annualized Capital Cost** | **Annualized Operating Cost** | **Total Annualized Costs** | **Cost Effective-ness** ($/ton) |
|---|---|---|---|---|---|---|---|---|---|
| 51-150 | 15 / 6 | 0.13 | 0.05 | 0.08 | $8,364 | $9,798 | $16,121 | $34,283 | $750 |
| 151-300 | 0 / 3 | 0.02 | 0.01 | 0.01 | $4,182 | $4,899 | $11,718 | $20,799 | $4,001 |
| 301-500 | 0 / 0 | 0 | 0 | 0 | $0 | | | $0 | $0 |
| 501-1000 | 33 / 22 | 1.33 | 0.39 | 0.94 | $30,668 | $151,869 | $220,207 | $402,744 | $1,173 |
| 1001-2000 | 30 / 30 | 1.82 | 0.54 | 1.27 | $41,820 | $179,701 | $304,316 | $525,837 | $1,131 |
| < 2001 | 23 / 15 | 2.30 | 0.80 | 1.50 | $20,910 | $164,436 | $342,161 | $527,507 | $964 |
| **Totals** | **101 / 76** | **5.60** | **1.79** | **3.81** | **$105,944** | **$510,703** | **$894,523** | **$1,511,170** | **$1,075** |

a. Prime engines that operate more than 100 hours per year.
b. Number of engines that were not subject to BACT requirements at the time of installation.

## Cost Assumptions:

- Quarterly monitoring with a portable analyzer was estimated to take approximately 2 man-hours per quarter at an hourly rate of $50.
- A portable analyzer costs approximately $7000.

## B. Incremental Cost Effectiveness

Section 40920.6 of the California Health and Safety Code requires an air district to perform an incremental cost analysis for any proposed Best Available Retrofit Control Technology rule or feasible measure. The air district must: (1) identify one or more control options achieving the emission reduction objectives for the proposed rule; (2) determine the cost effectiveness for each option; and (3) calculate the incremental cost effectiveness for each option. To determine incremental costs, the air district must "calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option."

In preparing the incremental cost effectiveness, staff compared the cost and emission reductions of the various control options of the proposal to that of the control option of electrification, replacement of the IC engine with an electric motor. Although this control option may eliminate NOx and CO emissions at the source, it ultimately has the potential of increasing NOx and CO emissions at the source of electrical production, when that electricity is produced through the combustion of fossil fuels. The net reduction of pollutants from stationary IC engines would be dependent on the fraction of electricity produced in the Bay Area relative to the total amount consumed (weighted by thermal efficiencies). For the sake of this discussion, it is assumed that electrification results in no increase in NOx or CO emissions to other sources in the District.

The following tables (Table 18 through Table 20) provide the incremental cost effectiveness for the three classes of engines regulated by Rule 9-8.

**TABLE 18**
**Incremental Cost Effectiveness – Electrification**
**Compression-Ignited Engines (Diesel)**

| **Engine Size Ranges**[a] | **Annualized Cost**[4] **of Electrification** | **NOx Emission Reductions from Electrification** (tons/day) | **Cost Effectiveness of Electrification** | **Annualized Cost of Control** | **Proposal Emissions Reductions** (tons/day) | **Incremental Cost Effectiveness** ($/ton) |
|---|---|---|---|---|---|---|
| 51-150 | $155,462 | 0.07 | $4,985 | $349,969 | 0.04 | -$10,918 |
| 151-300 | $256,054 | 0.13 | $5,250 | $379,282 | 0.10 | -$9,124 |
| 301-500 | $193,511 | 0.22 | $2,375 | $289,210 | 0.17 | -$5,371 |
| 501-1000 | $433,562 | 0.62 | $1,915 | $711,249 | 0.49 | -$5,683 |
| 1001-2000 | $158,564 | 0.25 | $1,715 | $223,876 | 0.20 | -$3,242 |
| < 2001 | $605,680 | 2.27 | $731 | $1,259,119 | 1.78 | -$3,628 |
| **Totals** | **$1,802,832** | **3.6** | **$1,378** | **$3,212,705** | **2.8** | **-$4,727** |

**TABLE 19**
**Incremental Cost Effectiveness – Electrification**
**Spark-Ignited, Fossil-Fueled Engines**
**(Natural Gas, LPG, Propane, Gasoline, etc.)**

| Engine Size Ranges[a] | Annualized Cost[4] of Electrification | NOx Emission Reductions from Electrification (tons/day) | Cost Effectiveness of Electrification | Annualized Cost of Control | Proposal Emissions Reductions (tons/day) | Incremental Cost Effectiveness ($/ton) |
|---|---|---|---|---|---|---|
| 51-150 | $160,034 | 0.5 | $844 | $231,965 | 0.50 | -$8,702 |
| 151-300 | $336,071 | 0.6 | $1,641 | $426,927 | 0.49 | -$3,632 |
| 301-500 | $103,206 | 0.0 | $7,387 | $95,590 | 0.02 | $1,124 |
| 501-1000 | $722,603 | 0.3 | $6,600 | $554,735 | 0.14 | $2,879 |
| 1001-2000 | $558,486 | 0.3 | $4,787 | $417,046 | 0.15 | $2,293 |
| < 2001 | $1,287,131 | 0.7 | $5,295 | $848,478 | 0.34 | $3,633 |
| **Totals** | **$3,167,530** | **2.4** | **$3,609** | **$2,574,742** | **1.6** | **$2,111** |

**TABLE 20**
**Incremental Cost Effectiveness – Electrification**
**Spark-Ignited, Waste-Fueled Engines**
**(Digester and Landfill Gases)**

| Engine Size Ranges[a] | Annualized Cost[4] of Electrification | NOx Emission Reductions from Electrification (tons/day) | Cost Effectiveness of Electrification | Annualized Cost of Control | Proposal Emissions Reductions (tons/day) | Incremental Cost Effectiveness ($/ton) |
|---|---|---|---|---|---|---|
| 51-150 | $27,434 | 0.12 | $564 | $34,283 | 0.08 | -$2,318 |
| 151-300 | $13,717 | 0.10 | $1,922 | $20,799 | 0.01 | -$3,656 |
| 301-500 | 0 | 0 | n/a | $0 | 0 | n/a |
| 501-1000 | $812,418 | 1.31 | $1,675 | $402,744 | 0.94 | $2,888 |
| 1001-2000 | $1,351,308 | 1.82 | $2,036 | $525,837 | 1.27 | $4,155 |
| < 2001 | $1,379,069 | 2.30 | $1,644 | $527,507 | 1.50 | $2,921 |
| **Totals** | **$3,583,945** | **5.6** | **$1,754** | **$1,511,170** | **3.8** | **$3,254** |

As the tables indicate, there are some instances in which the cost of control exceeds that of electrification and the resulting incremental cost effectiveness value is negative. This indicates that it would be more cost effective to replace the stationary IC engine with an electric motor. However, as indicated in Table 4, the primary use of stationary IC engines is to generate electricity. Many of the engines have come online subsequent to the State's energy crisis of the late 1990s and early 2000s and are part of the State's Distributed Energy Generator Program which was established to help meet the energy demands of California. Replacing these engines would be counter to the purpose of the Distributed Energy Generator Program and make California more reliant on energy sources that lie beyond the borders of the State. Also, many IC engines provide

electricity in areas in which there is not access to the grid. For these reasons, electrification is not a reliable option to mandate even though the emission reductions for both NOx and PM would exceed those expected from the proposed amendments.

### C. Socioeconomic Impacts

Section 40728.5 of the California Health and Safety Code requires an air district to assess the socioeconomic impacts of the adoption, amendment or repeal of a rule if the rule is one that "will significantly affect air quality or emissions limitations." Applied Economic Development of Walnut Creek, California has prepared a socioeconomic analysis of the proposed amendments to Rule 9-8. District staff has reviewed and accepted this analysis. The analysis concludes that the affected facilities should be able to absorb the costs of compliance with the proposed rule without significant economic dislocation or loss of jobs.

### D. District Impacts

The Proposal will have very little impact on the District resources. All of the affected sources are currently permitted and inspected by district staff. The proposal would not result in an increase in permitting and inspection activities, except as new IC engines and new abatement equipment on existing engines are installed. However, as noted previously, the State CI Engine ATCM will require replacement or retrofit of most prime diesel fuel stationary IC engines. Consequently, as engine operators simultaneously comply with both rules, there would be no increase in permitting or inspection activities. There would be a small increase in staff time devoted to the review of testing and monitoring requirements and also the potential for a small increase in compliance assistance.

## VII. ENVIRONMENTAL IMPACTS

Pursuant to the California Environmental Quality Act, the District has had an initial study for the proposed amendments prepared by Environmental Audit, Inc. The initial study concludes that there are no potential significant adverse environmental impacts associated with the proposed amendments. A negative declaration is proposed for approval by the District Board of Directors.

The District Climate Protection program encourages reductions in greenhouse gas (GHG) emissions such as carbon dioxide ($CO_2$). To this end, staff initially proposed limits expressed in grams per brake horsepower-hour (g/bhp-hr). It was believed that a mass emission per unit energy standard would encourage more efficient use of the engines. However, based on discussions with engine manufacturers and District source test staff, it was concluded that because manufactured engines (like automobiles) can only operate within a narrow range of efficiencies, the expression of the emissions standard would have little effect

on an engine's operation. Further, for engines where the gas composition is variable, as is the case with waste gas-fueled engines, determining compliance would be difficult if not impossible because of the gas stream variability. As discussed under the Rule Development / Public Process section below, staff has revised the expression of the emissions limits to parts per million by volume (ppmv) standards. This change does not cause an impact in the generation of greenhouse gas emissions.

The proposal also allows spark-ignited engines in the range between 50 and 250 bhp the option of delayed compliance. This size range includes small CHP units. These engines provide not only electrical power, but the exhaust heat is used to provide space and/or water heating. This use of the exhaust heat substantially increases the effective thermal efficiency of these engines. The proposal allows the operators of these smaller engines, which are not currently subject to any emissions limits in the rule currently, additional time to recoup the useful life out of the units. This allowance was made because it would be difficult to retrofit these engines with control technology and continue to benefit from the recovery of the exhaust heat. Because there exists the potential to lose the benefit of heat recovery, some of the operators would more than likely chose to connect to the grid for electrical power and burn natural gas for space and water heating. This additional power use would result in a increase in GHG emissions, which would be contrary to the aims of our Climate Protection Program. To retain the benefit for the operator and to prevent this increase, the delayed compliance option has been added. New CHP units, which are equipped with catalysts, can meet the proposed standards.

## VIII. REGULATORY IMPACTS

Section 40727.2 of the Health and Safety Code requires an air district, in adopting, amending, or repealing an air district regulation, to identify existing federal and district air pollution control requirements for the equipment or source type affected by the proposed change in air district rules. The air district must then note any difference between these existing requirements and the requirements imposed by the proposed change.

The EPA New Source Performance Standards for Off-Road Compression-Ignited Engines: The Off-Road CI Engine New Source Performance Standards (NSPS) applies to new stationary diesel engines. Emission limitations become progressively more stringent as model years advance. While these standards affect new stationary CI engines, they do not retroactively affect existing (in-use) engines. However, operators complying with the proposal may be affected by the Stationary CI Engine NSPS if compliance is achieved by purchasing a new CI engine.

The ARB CI Engine ATCM: In 2004, the ARB adopted the CI Engine ATCM, which sets emissions limits for PM and other criteria pollutants for diesel-fueled

engines and requires the use of cleaner-burning fuels for all diesel engines. This is a State requirement and is not required by HSC Section 40727.2. However, the CI Engine ATCM will significantly affect stationary diesel engines in California; it will result in either the retrofit or the replacement of virtually all existing prime engines and the reduction of hours of operation for emergency standby engines by 2011. The ATCM:

- Does not exempt low-usage engines from emissions limits;
- Contains emissions limits and other requirements for new engines, including new engines less than 50 bhp; and also
- Contains emissions limits and requirements for agricultural engines.

The CI Engine ATCM does not substantially reduce NOx or CO emissions from diesel engines. Many of the engines affected by the CI Engine ATCM will also have to comply with these proposed amendments. The proposed effective dates in Rule 9-8 coincide with the effective dates in the ATCM to allow operators of stationary diesel engines the opportunity to comply with both the ATCM and the proposed amendments to Rule 9-8 on the same schedule.

## IX. RULE DEVELOPMENT / PUBLIC CONSULTATION PROCESS

The rule development process to bring these proposed amendments to the Board of Directors has been a comprehensive process involving engine owners and operators, engine manufacturers, consultation with other agencies and District staff, and discussions with trade organizations, including meetings with the California Council for Environmental and Economic Balance. Staff developed the emissions inventory and potential reductions from the review and analysis of over 5000 stationary IC engines listed in the permit database. Staff notified all owners and operators along with other interested parties and conducted a public workshop on March 1, 2007.

The purpose of the Public Workshop was to solicit comments from the public on the proposed amendments to Rule 9-8. During the workshop, which was attended by approximately 30 interested stakeholders, staff responded to questions about information presented in the Workshop Report and the proposed amendments. Based on the comments received at the workshop and during the associated public comment period, staff made several changes to the proposal.

Comments received at the workshop and during the comment period focused mainly on the proposed compliance dates, definitions of “emergency use,” alternative compliance dates for spark-ignited engines, proposed emissions limits for new engines, and compliance determinations and testing.

In response to these comments, staff made the following modifications to the proposal:

- Definition of Emergency Use: The definition of emergency use has been broadened to allow the use of emergency standby engines and low usage engines where necessary for fire, flood, power failure or other emergencies. The rule makes clear that such events must be imminent, not merely speculative. Moreover, an engine operating as a standard component of a system would not be considered an emergency use engine, even if failure of the system might lead to an emergency.

- Effective Dates: The effective date for compliance with the emissions limits for spark-ignited engines was extended to January 1, 2012, to ensure operators have sufficient time to design controls, purchase equipment, secure permits, contract work, and complete construction.

- Alternative Compliance for Spark-Ignited Engines: Operators of spark-ignited engines of model year 1996 or later or engines sized between 50 and 250 bhp have been provided an option to delay compliance until January 2016 to allow for them to recoup most of the useful life of the engine. However, at the time of compliance, the engine must meet the BACT levels that would be applicable at that time.

- Emission Limits for New Engines: The emissions limits for new engines were removed from the proposal. New engines are subject to best available control technology (BACT). Emission limits for new engines would have been redundant of the District's existing new source review process.

- Quarterly Demonstration of Compliance: A provision has been added to require regular monitoring to promote continued compliance. Quarterly monitoring with a hand held device – the approach recommended by the ARB BARCT Determination – is a requirement of this rule. Monitoring protocols have been added to the proposal.

- Grams per Brake Horsepower-Hour Standard: The Workshop Report, released in January 2007, contained emissions limits stated in grams per brake horsepower-hour (g/bhp-hr) instead of parts per million by volume (ppmv). A g/bhp-hour-based standard was intended to promote energy efficiency and reduce greenhouse gas emissions by providing a standard whereby the engine that derives the most useful energy per unit of fuel burned (and unit of pollution produced) would most expeditiously meet the emission standard.

  Staff has returned to the use of the ppmv limits. The ppmv limits can be easily determined using a hand-held monitor and require only one type of measurement. Determining compliance with the g/bhp-hr limits would require measuring of the pollutant in the exhaust (in ppmv) along with measuring the thermal efficiency of the engine and the volume of exhaust gases create from the combustion of the fuel. Thermal efficiency can only be based on a manufacturer's determination and would be very difficult, if not impossible, to verify. Equally, the ability of an operator to adjust an IC engine to increase efficiency is problematic. Also, for waste gas-fueled engines, the energy and exhaust derived varies as the fuel composition varies day-to-day, and even

hour-to-hour. Due to these variations it would be difficult to later verify the conditions under which the emission limit determination was made. For these reasons, staff concluded that achievement of the emissions reductions from the proposed amendments of the rule would be better served if the emissions limits are presented in units that are most easily measured, which are ppmv instead of g/bhp-hr.

- Delayed Compliance for Smaller Spark-Ignited Engines: Staff received a comment letter from Tecogen®, a manufacturer of combined heat and power (CHP) engine units that utilize the waste heat from the exhaust to provide water or space heating. Consequently, the engines can achieve overall thermal efficiencies of 80 percent or more. These CHP units, which are typically in the 75 to 125 bhp size range and meet the requirements of the California Distributed Generation Program,[20] are currently exempt from the emissions limits of the rule and are responsible for a small fraction of the NOx emissions. In order to encourage continued use of these CHP units, the proposed amendments allow a delayed compliance option for these spark-ignited natural gas-fueled engines. This allows operators the opportunity to recoup the useful life of these engines and continue utilizing the waste heat for water and space heating and, thereby, reduce greenhouse gas emissions that would otherwise be generated from other sources. New CHP units are equipped with a catalyst that meets the proposed standards.

## X. CONCLUSION

Pursuant to the California Health and Safety Code Section 40727, before adopting, amending, or repealing a rule the Board of Directors must make findings of necessity, authority, clarity, consistency, non-duplication and reference. The proposal is:

- Necessary to supplement the District's ability to meet the commitment made as part of the District's PM Implementation Schedule adopted pursuant to Senate Bill 656, and to attain the State one-hour ozone standard, as well as meet transport mitigation requirements;
- Authorized by California Health and Safety Code Section 40702;
- Clear, in that the new regulation specifically delineates the affected industries, compliance options and administrative and monitoring requirements for industry subject to this rule;
- Consistent with other District rules, and not in conflict with state or federal law;
- Non-duplicative of other statutes, rules or regulations; and
- The proposed regulation properly references the applicable District rules and test methods and does not reference other existing law.

A socioeconomic analysis prepared by Applied Development Economics has found that the proposed amendments would not have a significant economic impact or cause regional job loss. District staff have reviewed and accepted this analysis. A California Environmental Quality Act analysis prepared by Environmental Audit, Inc., concludes that the proposed amendments would not result in any adverse environmental impacts. District staff have reviewed and accepted this analysis as well. A Negative Declaration for the proposed amendments has been prepared and will be circulated for comment.

Staff recommends the adoption of the proposed amendments to Regulation 9, Rule 8: Nitrogen Oxide and Carbon Monoxide from Stationary Internal Combustion Engines, and approval of a CEQA Negative Declaration.

## XI. REFERENCES


[1] Final Rule; Control of Emissions of Air Pollution from Nonroad Diesel Engines; 40 CFR Parts 9, 86, and 89.

[2] Final Rule; Control of Emissions of Air Pollution from Nonroad Diesel Engines; 40 CFR Parts 9, 69, et seq.

[3] Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60 Subpart IIII.

[4] Determination of Reasonably Available Control Technology and Best Available Control Technology for Stationary Spark-Ignited Internal Combustion Engines, ARB, November 2001.

[5] Airborne Toxic Control Measure for Stationary Compression Ignition Engines, section 93115, title 17, California Code of Regulations.

[6] "Emission Control Technology for Stationary Internal Combustion Engines" MECA, July 1997.

[7] "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles," ARB, October 2000.

[8] SB 656 Particulate Matter Implementation Schedule, BAAQMD, November 2005.

[9] Rule Development Staff Report, Regulation 9, Inorganic Gaseous Compounds, Rule 8, Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines, BAAQMD, November 1992,

[10] DRAFT CAPCOA/ARB Proposed Determination of Reasonably Available Control Technology and Best Available Control Technology for Stationary Internal Combustion Engines, December 1997.

[11] Diesel Progress North American Edition, June 2000.

[12] Diesel Retrofit Technology for Clean Air, MECA, 2005. http://www.meca.org/page.ww?name=Home&section=Diesel+Retrofit+Subsite

[13] Letter from Timothy A. French of the Engine Manufactures Association to Mr. John D. Barnes, P.E., New York State Department of Environmental Conservation, March 4, 2003.

[14] Appendix II, Stationary and Portable Diesel-Fueled Engines: Appendix to the Diesel Risk Reduction Plan. October 2000.

[15] Diesel Progress North American Edition, September 2003.

[16] Guidance for the Permitting of Electrical Generation Technologies.

[17] Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure for Stationary Compression-Ignition Engines, Stationary Source Division, ARB, September 2003.

[18] Conversation with ARB staff member, Ron Hand, June 21, 2006.

[19] Joe Suchecki, Engine Manufacturers Association, Email to Victor Douglas, August 25, 2006.

[20] Distributed Generation Certification Program, Sections 94200 – 94214, Article 3, Subchapter 8, Chapter 1, Division 3 or Title 17, California Code of Regulations.

[21] "Guidance for the Permitting Generation of Electrical Generation Technologies," ARB, July 2002.

[22] Internal District Memorandum, A First Look at NOx/ammonium nitrate tradeoffs, David Fairley, September 8, 1997.

[23] Marty Kay, South Coast Air Quality Management District, Phone conversation with Victor Douglas, August 30, 2006.

[24] Keith Duval, Ventura County Air Pollution Control District, Phone conversation with Victor Douglas, August 30, 2006.

[25] Saul Gomez, San Joaquin Valley Unified Air Pollution Control District, Phone conversation with Victor Douglas, August 30, 2006.

[26] Mark Szymczak, Cummins West, Inc., Email, January 26, 2007 to Victor Douglas (Proprietary Information).

[27] Mark Szymczak, Cummins West, Inc., Email, March 22, 2007 to Victor Douglas (Proprietary Information).

[28] Steve Cushman, Chief Engineer, Peterson Power Systems, Inc.., Email, April 5, 2007 to Victor Douglas (Proprietary Information).

**APPENDIX A**
**COMMENTS AND RESPONSES**

Staff received comments from the staff of the California Air Resources Board in a letter dated July 5, 2007; the City of Sunnyvale, Department of Public Works in a letter dated July 9, 2007; and the Central Contra Costa Sanitary District in a letter dated July 9, 2007.

**California Air Resources Board, July 5, 2007 Letter:**

1. Comment – Section 9-8-110, Exemptions: Proposed Section 9-8-110 Exemptions, which states that, "The requirements of Sections … 501 through 503 shall not apply …," is inconsistent with proposed Section 9-8-502.1, which states that, "Any person who operates any engine that is exempt … by Section 110 or 111 shall keep records …." If the District intends that operating-hour records be kept on exempted engines, we recommend that Section 9-8-110 be amended as follows: "The requirements of Sections … 501 and ~~through~~ 503 shall not apply …."

2. Comment – Section 9-8-110.2, Exemptions: Proposed Section 9-8 contains two provisions designated as "Section 9-8-110.2." The first Section 9-8-110.2 exempts engines less than or equal to 50 horsepower until January 2012. The second Section 9-8-110.2 exempts engines fired exclusively by liquid fuels until January 2012. To avoid confusion for persons declaring exemptions, and for others, we recommend that distinctive subsection numbering be provided for each provision in the subsections of Section 9-8-110.

   Staff Response: Staff agrees with Comments 1 & 2. The proposal has been amended to reflect the changes suggested by the comments. These changes are not substantive.

3. Comment – Section IV.B Proposed Amendments, Page 15 of the Staff Report: We recommend that Section IV.B of the Staff Report clarify that Proposed Rule 9.8 emission limit requirements will not apply to 50-249 hp engines and to liquid-fueled engines until January 1, 2012.

4. Comment – Section V.C. NOx Emission Reductions, Page 22 of the Staff Report: The statement, "The category of emergency standby engines includes both emergency standby and essential service engines" (Page 22, third paragraph) implies that the entire engine fleet of an essential service agency/industry should be considered emergency standby. Some essential service agencies/industries may routinely use engines. Identifying all engines used by such agencies/industries as emergency use is not supported by Proposed Rule 9.8 definitions for "Emergency Standby Engine," "Emergency Use," and "Reliability-related Activities." In

fact, there appears to be no need to distinguish essential service emergency standby engines from other emergency standby engines because the Section 9-8-231 definition of "Emergency Use" specifically addresses essential service emergency use activities. We recommend that the District delete the aforementioned statement. Alternatively, the District could revise the statement to indicate that only those essential service agency/industry engines operating in an emergency use capacity are "Emergency Standby Engines."

5. Comment – Section V.E. Emissions from Agricultural Equipment, Page 23 of the Staff Report: Section V.E. explains why the District has not included NOx and CO emission limits or other requirements for engines used in agricultural operations, but it does not alert the agricultural community and public to future requirements for agricultural engines. We recommend that the District additionally mention that it will implement and enforce PM, NOx, HC, and CO emission limits and registration requirements for stationary diesel-fueled agricultural engines under the Stationary Diesel Engine ATCM (approved by the Air Resources Board on November 16, 2006).

6. Comment – Section VIII. Regulatory Impacts, Pages 31-32 of the Staff Report: We recommend that the subsection entitled "The ARB CI Engine ATCM" alert the regulated community and public to additional requirements in the ATCM that are not in proposed Rule 9.8. These requirements could simply be listed as follows:

    - The ATCM does not exempt low-use engines (Proposed Rule 9.8 does);
    - The ATCM contains emission limits and other requirements for new engines, including new less than 50 hp engines (Proposed Rule 9.8 does not); and
    - The ATCM contains emission limits and requirements for agricultural engines (Proposed Rule 9.8 exempts such engines).

    Staff Response: Staff has noted these comments and amended the Staff Report where appropriate.

**City of Sunnyvale, Department of Public Works: July 9, 2007 Letter**

1. Comment: The May 27, 2007, Socioeconomic Analysis of the proposed rule change, we find what appears to be an erroneous assumption regarding the impacts to local government to comply with the rule changes. The analysis took into account the revenues available to the City of Sunnyvale as a whole. Whereas, the analysis did not consider that most communities operate their water pollution control plants (WPCP) as “Enterprise Funds” with revenue generated from user fee/sewer rates and

that monies from the General Fund are not available for operation of the plant. Only those monies generated from the local ratepayers fund the facility operations. Because of this, we believe that the finding of no significant impact is not substantiated.

Staff Response: The socioeconomic analysis is generated using standard methodologies and assumptions consistent with the statute in the California Health and Safety Code, prior analyses and other District practices. Similar to the California Environmental Quality Act (CEQA) analysis and Negative Declaration, the findings in a socioeconomic analysis are intended to help the Board of Directors formulate a decision on the proposed regulation, as are other required economic analyses. However, contrary to the commenter's suggestion, a socioeconomic analysis and a CEQA analysis are not interdependent. Each analysis stands on its own merits. Given the Sunnyvale WPCP Enterprise Fund revenues for FY 06-07 presented ($19.4 million) the cost of replacing the engines is still well under any level of significance. Spark-ignited waste fuel burning engines in the size range of Sunnyvale WPCP's engines, 220 brake horsepower, should cost no more than $200,000 each to replace, if replacement is necessary, for a comprehensive annualized cost of about $110,000. This is considerably less than one percent of Sunnyvale WPCP's stated operating budget of $19.4 million. (The $110,000 cost value includes the amortized cost of the three engines, the operating cost of the control, and monitoring cost imposed by the rule.)

2. Comment: One method for mitigating the potentially significant impact of the need to bring older engines into compliance would be to extend the compliance schedule. Because our existing influent engines are quite old [and are less than 250 bhp], the option for retrofitting them with control is impracticable. Additional time for compliance would provide for a more economic and environmentally beneficial long-term solution.

   Staff Response: Section 9-8-303 of the proposed amendments provides a delayed compliance option, up to 2016, for spark-ignited engines up to 250 bhp, provided the engines meet BACT requirements at the time of compliance. This allowance should provide ample time for budgeting and planning for replacement engines.

**Central Contra Costa Sanitary District: July 9, 2007 Letter**

1. Comment: The CCCSD requests that Section 9-8-331 – Essential Public Services, Hours of Operation, of the proposed amendments to Rule 9-8, be changed to allow up to 100 hours of discretionary time for emergency diesel standby engine. This change would be consistent with the ARB Diesel Engines ATCM requirements for discretionary run time for emergency standby diesel engines.

   Staff Response: The proposed amendments actually allow for up to 100 hours of non-emergency (or discretionary) operation through the low-usage exemption of Section 9-8-111. However, to provide clarity, staff proposes changing Section 9-8-331 of the proposal, as the commenter suggests, allowing up to 100 hours of discretionary operation for reliability related activities. Because the proposal would allow up to 100 hours of discretionary operation, this would be considered a clarification to the proposal.

SOCIOECONOMIC
ANALYSIS
PROPOSED RULE

# REGULATION 9, RULE 8:
# NITROGEN OXIDES AND CARBON MONOXIDE FROM STATIONARY INTERNAL COMBUSTION ENGINES

May 29, 2007

Prepared for

Bay Area Air Quality
Management District

Prepared by

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# CONTENTS

# 1. EXECUTIVE SUMMARY

## INTRODUCTION

This report describes the socioeconomic impacts of proposed Regulation 9, Rule 8 that, if implemented, will help the Bay Area Air Quality Management District (District) to achieve and maintain state ambient air quality standards for ozone and particulate matter. Following this summary, the report summarizes the proposed rule requirements and describes the methodology for the socioeconomic analysis. The report also describes the economic characteristics of sites affected by the proposed rule along with the socioeconomic impacts of the proposed rule.

## SUMMARY

The proposed rule affects 65 private sector sites in 24 Bay Area industries. The proposed amendments also impact 27 local government and non-profit agencies in the Bay area, as well as a number of state and federal government agencies. Combined, the impacted private sector sites generate sales of approximately $34.3 billion annually. Annual profits for these businesses are estimated at nearly $1.88 billion.

Revenues for the impacted local government and non-profit sites are approximately $7.4 billion. Revenues for state and federal government agencies are subject to annual budget processes at the state and federal level. Impacts to these agencies have not been analyzed for this report.

The analysis concludes that the costs associated with compliance will not result in significant economic dislocation or job losses. The total annual cost of compliance is far below the 10 percent of profits threshold for significant impact for affected private sector sites. For affected local government and non-profit sites, the annual compliance costs are below the 10 percent of revenues threshold for significant impact. Additionally, it is believed that small businesses will not be disproportionately impacted by the proposed rule.

# 2. DESCRIPTION OF THE PROPOSED RULE

## CURRENT STATUS OF THE RULE

Regulation 9, Rule 8 was originally adopted in 1993. It regulates the emissions of NOx and CO from stationary internal combustion engines of 250 bhp or greater powered by gaseous fuels such as natural gas or LPG. The current rule does not include emissions limits for liquid-fueled engines, such as those using diesel, or engines below 250 bhp. The rule also exempts engines used in agriculture, emergency standby engines, and low usage engines – engine less than1000 bhp are limited to 200 hours or operation per year, and engines greater 1000 bhp are limited to 100 hour per year.

## PROPOSED RULE AMENDMENTS

The proposed amendments will change the current rule in three primary ways:

1) Emission limits will be expanded to include IC engines of 50 to 250 bhp
2) The emission limits will now also apply to liquid-fueled engines, such as those using diesel
3) NOx emission limits will be reduced to reflect the most stringent limits in the State

## EMISSIONS REDUCTIONS

BAAQMD estimates that the proposed rule will reduce NOx emissions by 9.6 tons per day (tpd). PM emission reductions are expected to total 1.2 tpd.

# 3. IMPACT OF PROPOSED RULE AMENDMENTS

This section of the socioeconomic analysis describes demographic and economic trends in the San Francisco Bay Area (Bay Area) region. Following an overview of the methodology for the socioeconomic analysis, the first part of this section compares the Bay Area against California and provides a context for understanding demographic and economic changes that have occurred within the Bay Area between 1995 and 2005. After an overview of Bay Area industries, we focus on the following industries:

- NAICS 2123, Nonmetallic Mineral Mining and Quarrying
- NAICS 213112, Support Services for Oil and Gas Operations
- NAICS 2211, Electric Power Generation, Transmission, and Distribution
- NAICS 237, Heavy and Civil Engineering Construction
- NAICS 23891, Site Preparation Contractors
- NAICS 32411, Petroleum Refineries
- NAICS 324121, Asphalt Paving Mixture and Block Manufacturing
- NAICS 325, Chemical Manufacturing
- NACIS 327, Nonmetallic Mineral Product Manufacturing
- NACIS 331, Food Manufacturing
- NACIS 332, Fabricated Metal Product Manufacturing
- NACIS 33341, Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing
- NACIS 334, Computer and Electronic Product Manufacturing
- NACIS 3391, Medical Equipment and Supplies Manufacturing
- NACIS 42471, Petroleum Bulk Stations and Terminals
- NACIS 4521, Department Stores
- NACIS 481, Air Transportation
- NACIS 484, Truck Transportation
- NACIS 531, Real Estate
- NACIS 5617, Services to Buildings and Dwellings
- NACIS 5622, Waste Treatment and Disposal
- NACIS 622, Hospitals
- NACIS 623, Nursing and Residential Care Facilities

- NACIS 812, Personal and Laundry Services

Then the impacts from the proposed changes to Regulation 9, Rule 8 on businesses within these industries are analyzed. For the purposes of this report, the Bay Area region is defined as Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, and portions of Solano, and Sonoma Counties.

## METHODOLOGY

The socioeconomic analysis of the proposed rule concerning nitrogen oxides and carbon monoxide from stationary internal combustion engines involves the use of information provided directly by BAAQMD. In addition, it utilizes secondary data used to describe the industries affected by the proposed rule. Based on information provided by BAAQMD staff, ADE determined that the impacts would affect businesses in 24 Bay Area industries (listed in the preceding section).

With this information we began to prepare economic descriptions of the industry groups of which the impacted sites are a part, as well as to analyze data on the number of jobs, sales levels, the typical profit ratios and other economic indicators for the Bay Area businesses. ADE also reviewed and summarized documents available to the public such as annual reports for publicly traded companies.

With the annual reports and data from the US Economic Census and the IRS, ADE was able to estimate revenues and profit ratios for the sites impacted by the proposed rule. In calculating aggregate revenues generated by impacted businesses in the Bay Area, ADE estimated average annual revenues using the 2002 US Economic Census[1] and Dunn and Bradstreet data. Using the IRS Statistics and Income Integrated Business Data and other publicly available data, ADE calculated ratios of profit per dollar of sales for the businesses on which the analysis focused. To estimate

[1] The average revenue estimates were calculated per Bay Area establishment and inflated to current dollars.

employment, ADE used employment data from the California Employment Development Department.

The result of the socioeconomic analysis shows what proportion of profit the compliance costs represent. Based on a given threshold of significance, ADE discusses in the report whether the affected sites are likely to reduce jobs as a means of recouping the cost of compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the job losses are estimated using a regional IMPLAN input-output model.

## REGIONAL DEMOGRAPHIC TRENDS

The Bay Area experienced moderate population growth from 1995 to 2005. Between 1995 and 2000, the nine-county region increased by nearly 7.2 percent, from 6.3 million in 1995 to almost 6.8 million in 2000. From 1995 to 2005, the population increase was from 6.3 million to close to 7.1 million for an increase of approximately 11.2 percent. During the same time period, California had population growth of over 16 percent.

Within the Bay Area, the greatest percentage increase occurred in Contra Costa County. From 1995 to 2005 Contra Costa increased its population by over 17 percent. All other Bay Area counties had population increases slower than the State. The smallest percentage increase occurred in Marin County where population grew less than 6 percent from 1995 to 2005. Table 1 shows the population changes that have occurred in the Bay Area and California from 1995 to 2005.

**Table 1**
**Population Growth: San Francisco Bay Area**

| | Population | | | Percent Change | | |
|---|---|---|---|---|---|---|
| | 1995 | 2000 | 2005 | 95-00 | 00-05 | 95-00 |
| California | 31,617,000 | 33,871,648 | 36,728,196 | 7.1% | 8.4% | 16.2% |
| Bay Area | 6,329,800 | 6,783,760 | 7,067,403 | 7.2% | 4.2% | 11.2% |
| Alameda County | 1,332,900 | 1,443,741 | 1,500,228 | 8.3% | 3.9% | 12.6% |
| Contra Costa County | 869,200 | 948,816 | 1,019,101 | 9.2% | 7.4% | 17.2% |
| Marin County | 238,100 | 247,289 | 251,820 | 3.9% | 1.8% | 5.8% |
| Napa County | 116,800 | 124,279 | 132,990 | 6.4% | 7.0% | 13.9% |
| San Francisco County | 741,600 | 776,733 | 792,952 | 4.7% | 2.1% | 6.9% |
| San Mateo County | 673,300 | 707,161 | 719,655 | 5.0% | 1.8% | 6.9% |
| Santa Clara County | 1,568,200 | 1,682,585 | 1,752,653 | 7.2% | 4.2% | 11.8% |
| Solano County | 368,000 | 394,542 | 420,307 | 7.2% | 6.5% | 14.2% |
| Sonoma County | 421,700 | 458,614 | 477,697 | 8.9% | 4.2% | 13.3% |

Source: Applied Development Economics, based on household population estimates from The California Department of Finance

## REGIONAL ECONOMIC TRENDS

The Bay Area is one of the world's greatest regional economies. It benefits from pre-eminent knowledge-based industries, with competitive strength flowing from an unmatched culture of entrepreneurship, world-leading research institutions, and some of the nation's best educated and most highly skilled workforce. With these remarkable advantages, it has led through innovation in a wide range of research and industrial fields.

Many of the Bay Area's most prominent industries are manufacturing related. From Intel to PowerBar, Bay Area manufacturers are often high profile companies with world-renowned recognition. From small to large, Bay Area industry has been dynamic, creating wealth and jobs in both the export sector and local serving industries.

The economic base is typically comprised of export industries within the manufacturing, minerals-resource extraction, and agricultural sectors. There are also the "local support industries" such as retail or service sectors, the progress of which is a function of the economic base and demographic changes, and more so the latter than the former. As population increases in a given area, demand for services – such as realtors, teachers, healthcare – increases, as does

demand for basic retail items like groceries, gas for commuting, or clothing at the local apparel shops.

As of 2005, the professional and business services sector was the largest employer in the region, at 529,100 jobs or 17 percent of all private and public sector jobs. This is a change from 1995 when professional and business services accounted for 16 percent of all Bay Area employment. During the same period, professional and business services increased 14 percent. The next largest industry in the Bay Area is public service, or government, with 468,100 jobs. In 2005, government accounted for 15 percent of all Bay Area employment. From 1995 to 2005, government had one of the lowest growth rates of all industries at less than 6 percent. Two other industries came close to manufacturing in total employment. Retail trade and education & health care both made up 11 percent of total employment and had only a few thousand jobs less than manufacturing. Unlike manufacturing, both retail trade and education & health care had significant job gains from 1995 to 2005. All other industries made up less than manufacturing in total employment in 2005. Table 2 shows Bay Area industry sectors and their trends from 1995 to 2005.

**Table 2**
**Employment Profile of the San Francisco Bay Area, 1995-2005**

| Industry | 1995 | 2000 | 2005 | % of Total Employment in 2005 | % Change 1995 - 2000 | % Change 2000 - 2005 |
|---|---|---|---|---|---|---|
| Farm | 21,100 | 25,800 | 20,000 | 1% | 22% | -22% |
| Natural Resources & Mining | 2,920 | 4,600 | 4,560 | 0% | 58% | -1% |
| Construction | 105,200 | 165,700 | 164,100 | 5% | 58% | -1% |
| Manufacturing | 428,800 | 484,500 | 351,300 | 11% | 13% | -27% |
| Wholesale Trade | 121,700 | 138,800 | 122,900 | 4% | 14% | -11% |
| Retail Trade | 304,900 | 350,600 | 336,600 | 11% | 15% | -4% |
| Transportation, Warehousing and Utilities | 116,600 | 125,600 | 100,400 | 3% | 8% | -20% |
| Information | 92,100 | 151,600 | 112,300 | 4% | 65% | -26% |
| Financial Activities | 189,300 | 198,500 | 213,000 | 7% | 5% | 7% |
| Professional and Business Services | 464,400 | 670,300 | 529,100 | 17% | 44% | -21% |
| Educational and Health Services | 299,300 | 334,300 | 361,600 | 11% | 12% | 8% |
| Leisure and Hospitality | 260,400 | 297,700 | 311,000 | 10% | 14% | 4% |
| Other Services | 100,700 | 110,800 | 109,900 | 3% | 10% | -1% |
| Government | 442,100 | 465,200 | 468,100 | 15% | 5% | 1% |
| **Total** | **2,949,520** | **3,524,000** | **3,204,860** | **100%** | **19%** | **-9%** |

Source: Applied Development Economics from data supplied by the Labor Market Information Division of the California Employment Development Department

## DESCRIPTION OF AFFECTED INDUSTRIES

The proposed amendments to Regulation 9, Rule 8 affect industries in the following NAICS codes:

- NAICS 2123, Nonmetallic Mineral Mining and Quarrying
- NAICS 213112, Support Services for Oil and Gas Operations
- NAICS 2211, Electric Power Generation, Transmission, and Distribution
- NAICS 237, Heavy and Civil Engineering Construction
- NAICS 23891, Site Preparation Contractors
- NAICS 32411, Petroleum Refineries
- NAICS 324121, Asphalt Paving Mixture and Block Manufacturing
- NAICS 325, Chemical Manufacturing
- NACIS 327, Nonmetallic Mineral Product Manufacturing
- NACIS 331, Food Manufacturing
- NACIS 332, Fabricated Metal Product Manufacturing
- NACIS 33341, Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing
- NACIS 334, Computer and Electronic Product Manufacturing
- NACIS 3391, Medical Equipment and Supplies Manufacturing
- NACIS 42471, Petroleum Bulk Stations and Terminals
- NACIS 4521, Department Stores
- NACIS 481, Air Transportation
- NACIS 484, Truck Transportation
- NACIS 531, Real Estate
- NACIS 5617, Services to Buildings and Dwellings
- NACIS 5622, Waste Treatment and Disposal
- NACIS 622, Hospitals
- NACIS 623, Nursing and Residential Care Facilities
- NACIS 812, Personal and Laundry Services

What follows is a description of these industries, along with their economic trends in the Bay Area, and it provides a comparison between 2001 and 2005. Data in Table 3 below are for all sources, not just the major sites that have been focused on in the Bay Area. Table 3 also shows each of the

impacted industries relative to their larger economic sectors. Between 2001 and 2005, employment in ten of the impacted industries has been increasing. In half of these industries, the increase has been despite employment decreases in their larger economic sectors. For the fourteen industries that have experienced employment decreases, nine of them have been in larger economic sectors that also declined in employment during this period. Statewide, employment has increased in nine of the industries; and, only one of the increasing industries part of a was larger sector that was declining.

**Table 3**
**Employment Trends: Industries Affected by Proposed Amendments, 2001 – 2005**

| | | 2001 | 2005 | % Change from 2001 to 2005 | Annual % Change from 2001 to 2005 |
|---|---|---|---|---|---|
| **BAY AREA REGION** | | | | | |
| 21 | MINING | 3,699 | 1,997 | -46.00% | -11.60% |
| 2123 | Nonmetallic Mineral Mining and Quarrying | 579 | 839 | 44.87% | 7.70% |
| 213112 | Support Services for Oil and Gas Operations | 77 | 343 | 345.67% | 34.84% |
| 22 | UTILITIES | 3,821 | 5,876 | 53.79% | 8.99% |
| 2211 | Electric Power Generation, Transmission, and Distribution | 3,007 | 2,771 | -7.85% | -1.62% |
| 23 | CONSTRUCTION | 192,338 | 188,473 | -2.01% | -0.41% |
| 237 | Heavy and Civil Engineering Construction | 18,848 | 17,571 | -6.78% | -1.39% |
| 23891 | Site Preparation Contractors | 5,092 | 5,903 | 15.93% | 3.00% |
| 31 – 33 | MANUFACTURING | 454,329 | 351,300 | -22.68% | -5.01% |
| 32411 | Petroleum Refineries | 6,424 | 6,031 | -6.12% | -1.25% |
| 324121 | Asphalt Paving Mixture and Block Manufacturing | 18 | 190 | 957.78% | 60.28% |
| 325 | Chemical Manufacturing | 19,262 | 20,301 | 5.39% | 1.06% |
| 327 | Nonmetallic Mineral Product Manufacturing | 9,593 | 9,411 | -1.90% | -0.38% |
| 331 | Food Manufacturing | 5,601 | 4,263 | -23.89% | -5.31% |
| 332 | Farbicated Metal Product Manufacturing | 28,898 | 21,626 | -25.16% | -5.63% |
| 33341 | Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing | 650 | 706 | 8.63% | 1.67% |
| 334 | Computer and Electronic Product Manufacturing | 218,922 | 149,374 | -31.77% | -7.36% |
| 3391 | Medical Equipment and Supplies Manufacturing | 14,769 | 13,395 | -9.30% | -1.93% |
| 42 | WHOLESALE TRADE | 135,436 | 122,900 | -9.27% | -1.93% |
| 42471 | Petroleum Bulk Stations and Terminals | 175 | 753 | 330.29% | 33.89% |
| 44 – 45 | RETAIL TRADE | 349,816 | 335,744 | -4.02% | -0.82% |
| 4521 | Department Stores | 41,871 | 37,324 | -10.86% | -2.27% |
| 48 | TRANSPORTATION AND WAREHOUSING | 52,337 | 80,530 | 53.87% | 9.00% |
| 481 | Air Transportation | 30,431 | 19,735 | -35.15% | -8.30% |
| 484 | Truck Transportation | 18,985 | 16,750 | -11.77% | -2.47% |
| 53 | REAL ESTATE AND RENTAL AND LEASING | 61,312 | 61,402 | 0.15% | 0.03% |
| 531 | Real Estate; this appears to be a subsidiary of chevron texaco | 41,369 | 44,557 | 7.71% | 1.50% |
| 561 | ADMINISTRATIVE AND SUPPORT SERVICES | 191,228 | 170,727 | -10.72% | -2.24% |
| 5617 | Services to Buildings and Dwellings | 49,759 | 48,762 | -2.00% | -0.40% |
| 562 | WASTE MANAGEMENT AND REMEDIATION SERVICES | 9,718 | 10,333 | 6.33% | 1.23% |
| 5622 | Waste Treatment and Disposal | 4,457 | 4,510 | 1.19% | 0.24% |

**Table 3 (cont.)**
**Employment Trends: Industries Affected by Proposed Amendments, 2001 – 2005**

| | | | | | | |
|---|---|---|---|---|---|---|
| | 62 | HEALTH CARE AND SOCIAL ASSISTANCE | 276,359 | 283,210 | 2.48% | 0.49% |
| | 622 | Hospitals | 73,395 | 95,187 | 29.69% | 5.34% |
| | 623 | Nursing & Residential Care Facilities | 45,715 | 45,103 | -1.34% | -0.27% |
| | 81 | OTHER SERVICES, EXCEPT PUBLIC ADMINISTRATION | 130,973 | 140,159 | 7.01% | 1.36% |
| | 812 | Personal and Laundry Services | 29,464 | 28,757 | -2.40% | -0.48% |
| **CALIFORNIA** | | | | | | |
| | 21 | MINING | 23,620 | 22,083 | -6.51% | -1.34% |
| | 2123 | Nonmetallic Mineral Mining and Quarrying | 6,493 | 6,239 | -3.91% | -0.79% |
| | 213112 | Support Services for Oil and Gas Operations | 6,335 | 5,654 | -10.75% | -2.25% |
| | 22 | UTILITIES | 54,468 | 55,742 | 2.34% | 0.46% |
| | 2211 | Electric Power Generation, Transmission, and Distribution | 17,488 | 19,206 | 9.82% | 1.89% |
| | 23 | CONSTRUCTION | 774,145 | 900,684 | 16.35% | 3.07% |
| | 237 | Heavy and Civil Engineering Construction | 88,649 | 89,319 | 0.76% | 0.15% |
| | 23891 | Site Preparation Contractors | 22,441 | 28,727 | 28.01% | 5.06% |
| 31-33 | | MANUFACTURING | 1,779,012 | 1,498,497 | -15.77% | -3.37% |
| | 32411 | Petroleum Refineries | 13,447 | 12,442 | -7.47% | -1.54% |
| | 324121 | Asphalt Paving Mixture and Block Manufacturing | 747 | 612 | -18.07% | -3.91% |
| | 325 | Chemical Manufacturing | 82,035 | 81,985 | -0.06% | -0.01% |
| | 327 | Nonmetallic Mineral Product Manufacturing | 47,767 | 46,990 | -1.63% | -0.33% |
| | 331 | Food Manufacturing | 29,010 | 24,975 | -13.91% | -2.95% |
| | 332 | Farbicated Metal Product Manufacturing | 163,395 | 139,678 | -14.52% | -3.09% |
| | 33341 | Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing | 7,347 | 5,924 | -19.37% | -4.21% |
| | 334 | Computer and Electronic Product Manufacturing | 419,819 | 320,196 | -23.73% | -5.27% |
| | 3391 | Medical Equipment and Supplies Manufacturing | 51,841 | 47,762 | -7.87% | -1.63% |
| | 42 | WHOLESALE TRADE | 652,968 | 671,375 | 2.82% | 0.56% |
| | 42471 | Petroleum Bulk Stations and Terminals | 1,614 | 1,860 | 15.24% | 2.88% |
| 44-45 | | RETAIL TRADE | 1,571,994 | 1,650,052 | 4.97% | 0.97% |
| | 4521 | Department Stores | 195,490 | 208,878 | 6.85% | 1.33% |
| 48-49 | | TRANSPORTATION AND WAREHOUSING | 440,042 | 413,500 | -6.03% | -1.24% |
| | 481 | Air Transportation | 68,001 | 47,556 | -30.07% | -6.90% |
| | 484 | Truck Transportation | 115,134 | 112,939 | -1.91% | -0.38% |
| | 53 | REAL ESTATE AND RENTAL AND LEASING | 266,783 | 283,520 | 6.27% | 1.22% |
| | 531 | Real Estate; this appears to be a subsidiary of chevron texaco | 180,331 | 204,943 | 13.65% | 2.59% |

**Table 3 (cont.)**
**Employment Trends: Industries Affected by Proposed Amendments, 2001 – 2005**

| | | | | | |
|---|---|---|---|---|---|
| 561 | ADMINISTRATIVE AND SUPPORT SERVICES | 918,008 | 917,051 | -0.10% | -0.02% |
| 5617 | Services to Buildings and Dwellings | 196,080 | 202,559 | 3.30% | 0.65% |
| 562 | WASTE MANAGEMENT AND REMEDIATION SERVICES | 34,960 | 38,793 | 10.96% | 2.10% |
| 5622 | Waste Treatment and Disposal | 16,364 | 13,074 | -20.11% | -4.39% |
| 62 | HEALTH CARE AND SOCIAL ASSISTANCE | 1,201,718 | 1,296,611 | 7.90% | 1.53% |
| 622 | Hospitals | 332,386 | 374,904 | 12.79% | 2.44% |
| 623 | Nursing & Residential Care Facilities | 217,941 | 216,956 | -0.45% | -0.09% |
| 81 | OTHER SERVICES, EXCEPT PUBLIC ADMINISTRATION | 587,115 | 685,603 | 16.77% | 3.15% |
| 812 | Personal and Laundry Services | 132,811 | 136,954 | 3.12% | 0.62% |

Source: Calculations by Applied Development Economics; Based upon California Employment Development Department, Quarterly Census of Employment and Wages, BAAQMD

Table 4 identifies the economic characteristics of the specific sites affected by the proposed amendments to Regulation 9, Rule 8. This table shows that there are 65 impacted private sector businesses; and, that they employ an estimated 4,158 workers. These sites have an estimated aggregate payroll of more than $244 million, and estimated revenues of nearly $34.3 billion. In calculating aggregate revenues generated by impacted businesses, the consultant utilized a combination of Dunn and Bradstreet data and the 2002 US Economic Census to estimate an average revenue figure per establishment, expressed in current dollars.

**Table 4**
**Economic Characteristics of Impacted Businesses in the San Francisco Bay Area**

| | No. of Businesses | Estimated Sales | Estimated Employment | Estimated Payroll |
|---|---|---|---|---|
| Heavy and Civil Construction | 3 | $ 61,928,026 | 67 | $ 4,800,948 |
| Food Manufacturing | 3 | $ 152,442,365 | 130 | $ 7,108,765 |
| Nonmetallic Mineral Product Manufacturing | 5 | $ 204,308,770 | 151 | $ 7,444,445 |
| Farbicated Metal Product Manufacturing | 6 | $ 129,041,369 | 92 | $ 4,557,756 |
| Computer and Electronic Product Manufacturing | 3 | $ 79,668,321 | 264 | $ 31,991,328 |
| Air Transportation | 3 | $ 29,447,524,079 | 559 | $ 31,367,405 |
| Real Estate | 3 | $ 16,504,282 | 16 | $ 843,018 |
| Nonmetallic Mineral Mining & Quarrying | 3 | $ 22,536,866 | 79 | $ 5,053,160 |
| Electric Power Generation, Transmission, & Distribution | 11 | $ 437,684,575 | 802 | $ 15,110,207 |
| Waste Treatment & Disposal | 8 | $ 56,681,313 | 469 | $ 29,240,304 |
| Other[1] | 17 | $ 3,658,282,215 | 1,528 | $ 106,526,998 |
| **TOTAL** | **65** | **$ 34,266,602,180** | **4,158** | **$ 244,044,334** |

Source: California Employment Development Department Quarterly Census of Employment and Wages; Minnesota IMPLAN Group; BAAQMD; Calculations by Applied Development Economics.

[1]Includes: Chemical Manufacturing (NAICS 325); Truck Transportation (NAICS 484); Hospitals (NAICS 622); Nursing & Residential Care Facilities (NAICS 623); Medical Equipment and Supplies Manufacturing (NAICS 3391); Department Stores (NAICS 4521); Services to Buildings and Dwellings (NAICS 5617); Site Preparation Contractors (NAICS 23891); Petroleum Refineries (NAICS 32411); Ventilation, Heating, Air-Conditiong, and Commercial Refrigeration Equipment Manufacturing (NAICS 33341); Petroleum Bulk Stations and Terminals (NAICS 42471); Support Services for Oil and Gas Operations (NAICS 213112); Asphalt Paving Mixture and Block Manufacturing (NAICS 324121); Other services, except public administration (NAICS 812)

As Table 5 shows, the businesses impacted by the rule amendments represent less than one percent of employment for all impacted industries. Though this overall share is low, some impacted industries are represented at a higher degree. For example, impacted Electric Power Generation, Transmission, and Distribution businesses represent nearly 30 percent of all Bay Area employment in that industry. The impacted sites also represent less than one percent of the State's employment in these industries.

**Table 5**
**Employment at Impacted Sites Relative to Bay Area and California**

| | No. of Businesses | Estimated Employment | Impacted Sites as a % of Bay Area Total | Impacted Sites as a % of California Total |
|---|---|---|---|---|
| Heavy and Civil Construction | 3 | 67 | 0.38% | 0.08% |
| Food Manufacturing | 3 | 130 | 3.06% | 0.52% |
| Nonmetallic Mineral Product Manufacturing | 5 | 151 | 1.60% | 0.32% |
| Farbicated Metal Product Manufacturing | 6 | 92 | 0.43% | 0.07% |
| Computer and Electronic Product Manufacturing | 3 | 264 | 0.18% | 0.08% |
| Air Transportation | 3 | 559 | 2.83% | 1.17% |
| Real Estate | 3 | 16 | 0.04% | 0.01% |
| Nonmetallic Mineral Mining and Quarrying | 3 | 79 | 9.38% | 1.26% |
| Electric Power Generation, Transmission, and Distribution | 11 | 802 | 28.95% | 4.18% |
| Waste Treatment and Disposal | 8 | 469 | 10.39% | 3.58% |
| Other[1] | 17 | 1,528 | 0.48% | 0.11% |
| **TOTAL** | **65** | **4,158** | **0.70%** | **0.18%** |

Source: U.S. Economic Census 2002; California Employment Development Department Quarterly Census of Employment and Wages; Minnesota IMPLAN Group; BAAQMD; Calculations by Applied Development Economics.

[1]Includes: Chemical Manufacturing (NAICS 325); Truck Transportation (NAICS 484); Hospitals (NAICS 622); Nursing & Residential Care Facilities (NAICS 623); Medical Equipment and Supplies Manufacturing (NAICS 3391); Department Stores (NAICS 4521); Services to Buildings and Dwellings (NAICS 5617); Site Preparation Contractors (NAICS 23891); Petroleum Refineries (NAICS 32411); Ventilation, Heating, Air-Conditiong, and Commercial Refrigeration Equipment Manufacturing (NAICS 33341); Petroleum Bulk Stations and Terminals (NAICS 42471); Support Services for Oil and Gas Operations (NAICS 213112); Asphalt Paving Mixture and Block Manufacturing (NAICS 324121); Other services, except public administration (NAICS 812)

The proposed amendments to Regulation 9, Rule 8 also impact a number of local, state, and federal government and non-profit agencies. Table 6 identifies these agencies and divides them into two groups: 1) local governments and non-profits and 2) state and federal governments.

**Table 6**
**List of Impacted Government Agencies and Non-profits**

**LOCAL GOVERNMENT AND NON-PROFIT**

| | |
|---|---|
| 2200 Pacific Homeowner's Association | Pinole-Hercules Wastewater Treatment Plant |
| Central Contra Costa Sanitary District | San Francisco, City & County, PUC |
| City & County of San Francisco | San Mateo Water Quality Control Plant |
| City of Santa Rosa Wastewater Treatment | San Ramon Valley Fire District |
| City of Sunnyvale Water Pollution Control | Solano County |
| Contra Costa Water District | Sonoma County |
| Delta Diablo Sanitation District | South Bayside System Authority |
| City of San Jose | South San Francisco-San Bruno Water Quality Plant |
| East Bay Municipal Utility District | The City of Brentwood |
| Fairfield-Suisun Sewer District | Town of Windsor |
| Coastside County Water District (San Mateo County) | University of San Francisco |
| Las Gallinas Valley Sanitary District | West Contra Costa County Landfill |
| Napa Sanitation District - Soscol | West County Wastewater District |
| Oro Loma Sanitary District | |

**STATE AND FEDERAL GOVERNMENT**

| | |
|---|---|
| Chabot Community College | Presentation High School |
| Clean Air Vehicle Test Center (an EPA facility) | Santa Rosa Junior College |
| East Side Unified High School District | SF State University, Main Campus |
| Fremont Union High School District | SFSU Housing Facilities (Cogeneration Plant) |
| DOE-KAO Sandia National Laboratories | SJ Unified School Dist - Leland High |
| Lawrence Livermore National Laboratory | Skyline Colleges |
| NASA-AMES Research Center | Travis AFB |
| National Park Service | |

Source: BAAQMD

Table 7 then estimates the annual revenues for the local government and non-profit agencies. State and federal government agency revenues are subject to annual budgeting at the state and federal level. They are not approximated for this analysis.

Estimated revenues for impacted local governments and non-profits total nearly $7.4 billion. The City and County of San Francisco, the City of San Jose, and the Contra Costa County constitute approximately two-thirds of the total. Sonoma County represents approximately seven percent. East Bay Municipal Utility District constitutes five percent. None of the other agencies represent more than five percent of the total.

**Table 7**
**Local Government General Fund and Operating Revenues**

| Agency | | Revnues |
|---|---|---|
| 2200 Pacific Homeowner's Association | $ | 2,318,653 |
| Central Contra Costa Sanitary District | $ | 54,200,000 |
| City & County of San Francisco | $ | 2,664,546,000 |
| City of Santa Rosa Wastewater Treatment | $ | 126,333,000 |
| City of Sunnyvale Water Pollution Control | $ | 186,261,551 |
| Contra Costa Water District | $ | 92,481,000 |
| Delta Diablo Sanitation District | $ | 28,803,147 |
| City of San Jose | $ | 956,829,159 |
| East Bay Municipal Utility District | $ | 368,421,000 |
| Fairfield-Suisun Sewer District | $ | 17,257,000 |
| Las Gallinas Valley Sanitary District | $ | 5,956,546 |
| Napa Sanitation District - Soscol | $ | 14,143,778 |
| Oro Loma Sanitary District | $ | 26,640,000 |
| Pinole-Hercules Wastewater Treatment Plant | $ | 11,899,397 |
| San Francisco, City & County, PUC | $ | 188,800,000 |
| San Mateo Water Quality Control Plant | $ | 75,100,000 |
| San Ramon Valley Fire District | $ | 40,984,317 |
| Solano County | $ | 193,061,207 |
| Sonoma County | $ | 518,479,924 |
| South Bayside System Authority | $ | 118,968,199 |
| South San Francisco-San Bruno Water Quality Plant | $ | 88,437,083 |
| The City of Brentwood | $ | 6,924,951 |
| Town of Windsor | $ | 11,147,661 |
| University of San Francisco | $ | 247,853,000 |
| Contra Costa County | $ | 1,307,505,097 |
| West County Wastewater District | $ | 12,191,151 |
| **TOTAL** | **$** | **7,365,542,820** |

Source: See Appendix A to the report

## COMPLIANCE COSTS

This section discusses the compliance costs associated with the proposed rule. The compliance costs include both capital and operating costs; and, are amortized over ten years. Both the size of the engine and the fuel it uses impact the costs associated with compliance. Table 8 details the annualized costs by engine size and fuel type.

**Table 8**
**Annualized Control Costs**

| Engine Size Ranges | No. of Impacted Engines | Annualized Quarterly Monitoring Costs | Annualized Capital Cost of Control | Annualized Operating Cost of Control | Total Annualized Costs |
|---|---|---|---|---|---|
| DIESEL ENGINES | | | | | |
| 51-150 | 34 | $ 47,396 | $ 272,043 | $ 30,530 | $ 349,969 |
| 151-300 | 32 | $ 44,608 | $ 256,041 | $ 78,633 | $ 379,282 |
| 301-500 | 15 | $ 20,910 | $ 160,027 | $ 108,273 | $ 289,210 |
| 501-1000 | 15 | $ 20,910 | $ 397,403 | $ 292,936 | $ 711,249 |
| 1001-2000 | 3 | $ 4,182 | $ 101,715 | $ 117,979 | $ 223,876 |
| < 2001 | 6 | $ 8,364 | $ 243,672 | $ 1,007,083 | $ 1,259,119 |
| **Totals** | **105** | **$ 146,370** | **$ 1,430,901** | **$ 1,635,434** | **$ 3,212,705** |
| SPARK-IGNITED ENGINES (FOSSIL FUEL) | | | | | |
| 51-150 | 35 | $ 48,790 | $ 130,551 | $ 52,624 | $ 231,965 |
| 151-300 | 42 | $ 58,548 | $ 195,992 | $ 172,387 | $ 426,927 |
| 301-500 | 8 | $ 11,152 | $ 41,898 | $ 42,539 | $ 95,590 |
| 501-1000 | 25 | $ 34,850 | $ 236,164 | $ 283,722 | $ 554,735 |
| 1001-2000 | 10 | $ 13,940 | $ 148,256 | $ 254,850 | $ 417,046 |
| < 2001 | 14 | $ 19,516 | $ 326,827 | $ 502,135 | $ 848,478 |
| **Totals** | **134** | **$ 186,796** | **$ 1,079,688** | **$ 1,308,257** | **$ 2,574,742** |
| SPARK-IGNITED (WASTE FUEL) | | | | | |
| 51-150 | 6 | $ 8,364 | $ 21,556 | $ 29,205 | $ 59,125 |
| 151-300 | 0 | $ - | $ - | $ - | $ - |
| 301-500 | 0 | $ - | $ - | $ - | $ - |
| 501-1000 | 22 | $ 30,668 | $ 151,869 | $ 220,207 | $ 402,744 |
| 1001-2000 | 30 | $ 41,820 | $ 179,701 | $ 304,316 | $ 525,837 |
| < 2001 | 15 | $ 20,910 | $ 164,436 | $ 342,161 | $ 527,507 |
| **Totals** | **73** | **$ 101,762** | **$ 517,562** | **$ 895,890** | **$ 1,515,213** |

Souce:
BAAQMD

The proposed rule amendments will impact 312 engines operated by the 65 private sector businesses and 42 government agencies and non-profits. The total cost of compliance for all 312 engines is $7.3 million. Approximately 94 percent of this cost will be borne by the 65 private sector businesses and 27 local government and non-profit agencies.

## BUSINESS RESPONSE TO COMPLIANCE COSTS

Sites impacted by the proposed amendments to the stationary internal combustion engine rule may respond in a variety of ways when faced with new regulatory costs. These responses may range from simply absorbing the costs and accepting a lower rate of return to shutting down the business operation all together. Businesses may also seek to pass the costs on to their customers in the form of higher prices. More likely, they may renew efforts to increase productivity and reduce costs elsewhere in their operation in order to recoup the regulatory costs and maintain profit levels.

## IMPACT ANALYSIS

The businesses' responses to increased compliance costs hinge on the effect of the costs on the profits generated at the affected sites. An impact on estimated profits greater than 10 percent implies that the source would experience serious economic effects because of the compliance cost. When compliance costs are greater than 10 percent of estimated profits, companies typically respond to the impact by laying off some workers, reducing hours of operation, or, in the most drastic case, possibly closing operations. A similar response is assumed to occur when the compliance costs exceed 10 percent of the revenues for local government and non-profit agencies.

Using the annual compliance cost estimates developed for the proposed rule amendments, ADE calculated the socioeconomic impacts of the proposed actions. In calculating impacts on profits, ADE used the IRS Statistics of Income Integrated Business Data. Based on this information, we estimate that the impacted businesses generated a combined profit of $1.88 billion on $34.3 billion in revenues. Table 9 details the profit ration assumptions used in estimating the profits for impacted private sector sites.

**Table 9**
**Private Sector Profit Margin Assumptions**

| NAICS | Description | Profit Margin |
|---|---|---|
| 237 | Heavy and Civil Construction | 4.11% |
| 311 | Food Manufacturing | 5.79% |
| 325 | Chemical Manufacturing | 5.87% |
| 327 | Nonmetallic Mineral Product Manufacturing | 5.87% |
| 332 | Fabricated Metal Product Manufacturing | 5.87% |
| 334 | Computer and Electronic Product Manufacturing | 5.87% |
| 481 | Air Transportation | 5.25% |
| 484 | Truck Transportation | 3.64% |
| 531 | Real Estate | 38.83% |
| 622 | Hospitals | 3.87% |
| 623 | Nursing & Residential Care Facilities | 3.87% |
| 2123 | Nonmetallic Mineral Mining and Quarrying | 9.82% |
| 2211 | Electric Power Generation, Transmission, and Distribution | 13.24% |
| 3391 | Medical Equipment and Supplies Manufacturing | 5.53% |
| 4521 | Department Stores | 2.26% |
| 5617 | Services to Buildings and Dwellings | 3.18% |
| 5622 | Waste Treatment and Disposal | 7.22% |
| 23891 | Site Preparation Contractors | 4.33% |
| 32411 | Petroleum Refineries | 7.00% |
| 33341 | Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing | 5.53% |
| 42471 | Petroleum Bulk Stations and Terminals | 2.70% |
| 213112 | Support Services for Oil and Gas Operations | 8.07% |
| 324121 | Asphalt Paving Mixture and Block Manufacturing | 5.53% |
| 812332 | Industrial Launderers | 6.08% |

Source: ADE calculations based upon SEC 10k Annual Reports and IRS Statistics of Income Integrated Business Data

Table 10 details the projected impacts of compliance with the proposed rule amendments on the profits of affected sites. The annual costs associated with compliance do not result in a significant impact on affected private sector sites. For all impacted private sector sites, the annual cost of compliance represents less than one percent of profits. Furthermore, there is not a single industry for which the cost of compliance represents more than ten percent of profits. For most of the industries, the annual cost is well below five percent of profits. The cost is in excess of five percent for only two industries, Waste Treatment and Disposal (7.45 percent) and Nonmetallic Mineral Mining and Quarrying (6.73 percent).

**Table 10**
**Impact of Estimated Compliance Cost on Estimated Private Sector Profits**

| Industry | No. of Businesses | Estimated Profits | Annual Compliance Cost | Cost as % of Profits |
|---|---|---|---|---|
| Heavy and Civil Construction | 3 | $ 2,547,322 | $ 83,384 | 3.27% |
| Food Manufacturing | 3 | $ 8,819,455 | $ 108,096 | 1.23% |
| Nonmetallic Mineral Product Manufacturing | 5 | $ 11,988,162 | $ 184,286 | 1.54% |
| Fabricated Metal Product Manufacturing | 6 | $ 7,571,720 | $ 138,532 | 1.83% |
| Computer and Electronic Product Manufacturing | 3 | $ 4,674,673 | $ 117,200 | 2.51% |
| Air Transportation | 3 | $ 1,545,576,827 | $ 147,380 | 0.01% |
| Real Estate | 3 | $ 6,407,820 | $ 145,733 | 2.27% |
| Nonmetallic Mineral Mining and Quarrying | 3 | $ 2,212,010 | $ 148,937 | 6.73% |
| Electric Power Generation, Transmission, and Distribution | 11 | $ 57,929,408 | $ 814,345 | 1.41% |
| Waste Treatment and Disposal | 8 | $ 3,472,217 | $ 258,797 | 7.45% |
| Other[1] | 17 | $ 224,706,441 | $ 503,237 | 0.22% |
| **TOTAL** | **65** | **$ 1,875,906,056** | **$ 2,649,927** | **0.14%** |

Source: ADE calculations, based upon 2002 US Economic Census; SEC 10k Annual Reports; IRS Statistics of Income Integrated Business Data; BAAQMD

[1]Includes: Chemical Manufacturing (NAICS 325); Truck Transportation (NAICS 484); Hospitals (NAICS 622); Nursing & Residential Care Facilities (NAICS 623); Medical Equipment and Supplies Manufacturing (NAICS 3391); Department Stores (NAICS 4521); Services to Buildings and Dwellings (NAICS 5617); Site Preparation Contractors (NAICS 23891); Petroleum Refineries (NAICS 32411); Ventilation, Heating, Air-Conditiong, and Commercial Refrigeration Equipment Manufacturing (NAICS 33341); Petroleum Bulk Stations and Terminals (NAICS 42471); Support Services for Oil and Gas Operations (NAICS 213112); Asphalt Paving Mixture and Block Manufacturing (NAICS 324121); Other services, except public administration (NAICS 812)

Table 11 illustrates the cost of compliance as a percent of revenue for affected local government and non-profit sites; and, shows that the rule amendments do not result in a significant impact for these agencies either. Total revenues for affected local governments and non-profits are $7.4 billion. The total annual cost of compliance is $4.3 million, less than one percent.

**Table 11**
**Impact of Estimated Compliance Cost on Local Government and Non-Profit Revenues**

| Revnues[1] | Annual Compliance Cost | Cost as % of Revenues |
|---|---|---|
| $ 7,365,542,820 | $ 4,241,399 | 0.06% |

Source: ADE Calculations, based upon BAAQMD

[1]Sources for local government and non-profit revenue are cited in Appendix A to this report.

# IMPACT ON SMALL BUSINESS

## DEFINITION OF SMALL BUSINESS PER CALIFORNIA STATUTE

For purposes of qualifying small businesses for bid preferences on state contracts and other benefits, the State of California defines small businesses in the following manner:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;
- Must have its principal office located in California
- Must have its owners (or officers in the case of a corporation) domiciled in California; and,
- Together with its affiliates, be either:
    - A business with 100 or fewer employees, and an average gross receipts of $10 million or less over the previous tax years, or
    - A manufacturer with 100 or fewer employees

## SMALL BUSINESS IMPACT ANALYSIS

Most of the affected private sector sites generate annual revenues in excess of $10 million. Less than one-third of them (31 percent; 20 sites) do not. Employment at each of these sites is estimated to be less than 100. Since the total cost of compliance for these 20 sites is less than $475,000, or 18 percent of the total, small businesses are not disproportionately impacted by the proposed rule amendments.

# APPENDIX A: LOCAL GOVERNMENT AND NON-PROFIT REVENUE SOURCE CITATIONS

| | |
|---|---|
| Central Contra Costa Sanitary District | http://www.centralsan.org/organization/finance.html |
| 2200 Pacific Homeowner's Association | 2002 US Economic Census |
| City & County of San Francisco | City and County of San Francisco Consolidated Budget and Annual Appropriation Ordinance, Fiscal Year Ending June 30, 2007 |
| City of Santa Rosa Wastewater Treatment | http://ci.santa-rosa.ca.us/default.aspx?PageId=2053 |
| City of Sunnyvale Water Pollution Control | http://sunnyvale.ca.gov/Departments/Finance/Budget/ |
| Contra Costa Water District | http://www.ccwater.com/welcome/financials.asp |
| Delta Diablo Sanitation District | http://www.ddsd.org/pdfs/Budget_Document.pdf |
| City of San Jose | http://www.sanjoseca.gov/budget/ |
| East Bay Municipal Utility District | http://www.ebmud.com/about_ebmud/financial_information/default.htm |
| Fairfield-Suisun Sewer District | http://www.fssd.com/indexSub.cfm?page=1367700 |
| Las Gallinas Valley Sanitary District | http://lafco.marin.org/District_revu.cfm?DistrictID=31 |
| Napa Sanitation District – Soscol | http://www.napasanitationdistrict.com/about/finances.html |
| Oro Loma Sanitary District | http://www.oroloma.org/management/budget/budget.html |
| Pinole-Hercules Wastewater Treatment Plant | http://www.ci.pinole.ca.us/about/finance_issues.html |
| San Francisco, City & County, PUC | http://sfwater.org/detail.cfm/MC_ID/18/MSC_ID/133/C_ID/3281 |
| San Mateo Water Quality Control Plant | http://www.cityofsanmateo.org/downloads/finance/2006-7_finances_at_a_glance.pdf |
| San Ramon Valley Fire District | Comprehensive Annual Financial Report, Year Ended June 30, 2005 |
| Solano County | http://www.co.solano.ca.us/FileDownloads/Downloads.asp?NavID=183 |
| Sonoma County | http://www.sonoma-county.org/auditor/financial_reports.htm#revenue |
| South Bayside System Authority | http://www.ci.san-carlos.ca.us/civica/filebank/blobdload.asp?BlobID=3093<br>http://www.belmont.gov/SubContent.asp?CatId=240001609&C_ID=240002235<br>http://www.belmont.gov/SubContent.asp?CatId=240001609&C_ID=240002235<br>http://www.westbaysanitary.org/pdf/AuditedApprovedBudget2005-06.pdf |
| South San Francisco-San Bruno Water Quality Plant | http://sanbruno.ca.gov/city_services/finance/Documents/06_07Budget.pdf<br>http://www.ci.ssf.ca.us/civica/filebank/blobdload.asp?BlobID=9098 |
| The City of Brentwood | http://www.ci.brentwood.ca.us/department/finance/past_fiscal_year_docs.cfm#2005 |
| Town of Windsor | http://www.ci.windsor.ca.us/3031.html#GeneralFundFinancialOverview |
| University of San Francisco | Dunn and Bradstreet |
| Contra Costa County | http://www.co.contra-costa.ca.us/depart/cd/recycle/options/v5126.htm |
| West County Wastewater District | http://www.wcwd.org/index.htm |

# Initial Study/Negative Declaration for the Amendments to Bay Area Air Quality Management District Regulation 9, Rule 8

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May 2007

**Chapter 1**



**Chapter 2**



**Chapter 3**

**FIGURES:**

**TABLES:**



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# Chapter 1

# Introduction

## Purpose of this Document

This Initial Study/Negative Declaration (IS/ND) assesses the environmental impacts of the proposed adoption of amendments to Regulation 9, Rule 8, by the Bay Area Air Quality Management District (BAAQMD or District). This assessment is required by the California Environmental Quality Act (CEQA) and in compliance with the state CEQA Guidelines (Title 14 California Code of Regulations §1400 et seq.). An IS/ND serves as an informational document to be used in the decision-making process for a public agency that intends to carry out a project; it does not recommend approval or denial of the project analyzed in the document. The BAAQMD is the lead agency under CEQA and must consider the impacts of the proposed rule amendments when determining whether to adopt them. The BAAQMD has prepared this IS/ND because no significant adverse impacts would result from the proposed rule amendments.

## Scope of this Document

This document evaluates the potential impacts of the proposed amendments on the following resource areas:

- aesthetics,
- agricultural resources,
- air quality,
- biological resources,
- cultural resources,
- geology and soils,
- hazards and hazardous materials
- hydrology and water quality,
- land use planning,
- mineral resources,
- noise,

- population and housing,
- public services,
- recreation,
- transportation and traffic, and
- utilities and service systems.

**Impact Terminology**

The following terminology is used in this IS/ND to describe the levels of significance of impacts that would result from the proposed rule amendments:

- An impact is considered *beneficial* when the analysis concludes that the project would have a positive effect on a particular resource.
- A conclusion of *no impact* is appropriate when the analysis concludes that there would be no impact on a particular resource from the proposed project.
- An impact is considered *less than significant* if the analysis concludes that an impact on a particular resource topic would not be significant (i.e., would not exceed certain criteria or guidelines established by BAAQMD). Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource.
- An impact is considered *less than significant with mitigation incorporated* if the analysis concludes that an impact on a particular resource topic would be significant (i.e., would exceed certain criteria or guidelines established by BAAQMD), but would be reduced to a less than significant level through the implementation of mitigation measures.

**Organization of This Document**

The content and format of this document, described below, are designed to meet the requirements of CEQA.

- Chapter 1, "Introduction," identifies the purpose, scope, and terminology of the document.
- Chapter 2, "Description of the Proposed Rule," provides background information of Regulation 9, Rule 9, describes the proposed rule amendments, and describes the area and facilities that would be affected by the amendments.
- Chapter 3, "Environmental Checklist," presents the checklist responses for each resource topic. This chapter includes a brief setting description for each resource

area and identifies the impact of the proposed rule amendments on the resources topics listed in the checklist.

- Chapter 4, "References Cited," identifies all printed references and personal communications cited in this report.

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# Chapter 2

# Description of the Proposed Rule

## Background

The Bay Area Air Quality Management District (District) is proposing adoption of Regulation 9, Rule 8 (Rule 9-8): Nitrogen Oxides (NOx) and Carbon Monoxide (CO) from Stationary Internal Combustion (IC) Engines. This proposed rule would control air pollution from Stationary Internal Combustion (IC) Engines used as both primary and backup engines to generate electricity and power pumps and compressors. The District proposes adoption of amendments to Rule 9-8 to fulfill a commitment proposed in its Senate Bill (SB) 656 Particulate Matter Implementation Schedule.

Stationary IC engines are currently regulated under Rule 9-8. IC engines are fueled by diesel, natural gas and liquid petroleum gas (LPG), refinery fuel gas, digester gas and landfill gas. Staff has identified nearly 5500 stationary IC engines located within the District. Rule 9-8 was designed to regulate emissions of NOx and CO from stationary IC engines of 250 brake horsepower (bhp) or greater powered by gaseous fuels. Currently the rule does not include emissions limits for liquid-fueled engines such as diesel engines or engines below 250 bhp. (Over 80 percent of the engines identified are powered using diesel fuel.) Rule 9-8 currently affects about 200 of the more than 5,000 stationary IC engines within the District.

The District is proposing amendments to Rule 9-8 to expand the scope of the rule to regulate NOx emissions from smaller stationary IC engines of 50 brake horse power (bhp) or larger; regulate NOx emissions from liquid-fueled engines such as diesel engines, and reduce the emissions limits for NOx for all affected stationary IC engines.

IC engines generate power through explosive combustion of an air/fuel mixture in an enclosed chamber. IC engines range in size from relatively small engines (less than 50 bhp) to extremely large engines (thousands of horsepower) and are used primarily to generate electricity, operate pumps and compressors, and power water pumps for irrigation. There are two primary types of IC engines: compression-ignited (CI) and spark-ignited (SI) engines. All IC engines operate under one of three modes: rich burn (excess fuel), stoichiometric (a chemical balance between fuel and oxygen), or lean burn (excess air). Generally, uncontrolled engines that run rich emit higher levels of hydrocarbons (HC) and CO, and lower levels of NOx and particulate matter (PM); while uncontrolled engines that run lean emit less HC and CO, and emit higher NOx and PM.

CI engines run lean (excess air) using diesel fuel or other longer-chained hydrocarbons, including fuel oil, distillate oil, or jet fuel. CI engines operate by compressing air, which increases the temperature of the air. When a gas is compressed, both its pressure and temperature increase. A diesel engine uses this property to ignite the air fuel mixture and

power the engine. The larger fraction of stationary IC engines in the District are CI engines, of which, diesel-fueled engines are the vast majority.

SI engines refer to internal combustion engines where the fuel-air mixture is ignited with a spark. The term contrasts with CI engines, where the heat from compression alone ignites the mixture. Most SI engines burn gaseous fuels such as natural gas, LPG, propane or waste gas from landfills or digesters. Natural gas fired spark-ignited engines are the second largest category of stationary IC engines in the Bay Area. These engines are operated as either rich-burn (excess fuel) or lean-burn.

Stationary IC engines can be used as emergency standby engines or prime engines. Emergency standby engines are typically used for emergency back-up electric power generation or the emergency pumping of water. In the District, there are over 4,700 emergency standby engines ranging in size from less than 10 bhp to almost 4,000 bhp. Currently, Rule 9-8 exempts these engines from emission standards, provided the annual hours of operation for reliability testing and maintenance do not exceed 100 hours. Emergency standby engines are fueled by both liquid and gaseous fuels.

Prime engines are stationary engines that are not used in an emergency back-up or standby mode. There are approximately 700 prime engines within the District. These engines are used primarily to generate electricity, or to power compressors, pumps, cranes, generators, and grinders. As with emergency and standby engines, prime engines are fueled by both liquid and gaseous fossil fuels. Prime engines may also be powered by waste, digester and landfill gases, which may require natural gas as a supplemental fuel.

Collectively, the total current inventory of NOx emissions from stationary engines in the Bay Area is estimated to be 14.8 tons per day (tpd). The NOx emitted from stationary diesel engines is estimated to be 6.8 tpd, about 46 percent of the 14.8 tpd total. The total PM inventory for stationary IC engines is estimated to be 2.6 tpd; 1.6 tpd of which is attributable to stationary diesel engines. CO emissions total about 5.1 tpd.

Stationary IC engines directly emit NOx and PM emissions. (Diesel engines are a large source of primary PM emissions.) The NOx emitted contributes to ozone formation and is also responsible for the secondary PM formation. These engines also emit hydrocarbons (HC) and carbon monoxide (CO). Ozone is formed from the reaction of NOx and HC. The formation of particulate matter from NOx through chemical reactions is termed "secondary PM formation."[1] Reducing NOx emissions would help to reduce secondary PM formation and also would help reduce ozone formation. Ozone, CO and PM are criteria pollutants that are subject to District and State regulation. The Bay Area, like most of the State, is classified as non-attainment for the State PM10 and PM2.5 standards. The Bay Area also is a non-attainment area for the State ozone standards. The

[1] The term "NOx" is use to collectively refer to nitric oxide (NO) and nitrogen dioxide ($NO_2$). Most NO, once emitted, reacts rapidly in the atmosphere to form $NO_2$. $NO_2$, in addition to reacting with HC to form ozone, reacts in the atmosphere to form PM – both $PM_{10}$ (ten microns ($\mu$m) or less in size) and $PM_{2.5}$ (2.5 $\mu$m or less).

Bay Area has not yet been classified for the new federal PM2.5 standard. State law requires that the region make progress in reducing ambient ozone and PM levels.

Both NOx and PM present public health risks. Ozone produced from chemical reactions involving NOx and volatile organic compounds may damage lung tissues and the respiratory tract. Once inhaled, PM may become lodged in the respiratory tract and lead to wheezing, nose and throat irritation, bronchitis, and lung damage.

**Objectives**

The objective of amended Rule 9-8 is to reduce PM and NOx emissions from IC engines in order to reduce particulate matter and ozone levels in the Bay Area. The Bay Area is not in attainment with the State particulate matter and ozone standards, so further reductions in emissions of PM and ozone precursors are needed.

The Bay Area is not in attainment of the California annual PM10 (particulate matter of 10 microns or less in diameter) or PM2.5 standards or the California 24-hour PM10 standard. The Bay Area is unclassified for the federal 24-hour PM10 and new PM2.5 standard.

The BAAQMD is not required to produce an attainment plan for particulate matter. However, under the requirements of Senate Bill 656 (SB 656, Sher), adopted in 2003, the District is required to develop a Particulate Matter Implementation Schedule in order to make progress toward attaining state and federal PM standards. The proposed amendments Rule 9-8 are included in the District's PM Implementation Schedule as one of the measures that the BAAQMD could adopt to reduce particulate matter.

The U.S. Environmental Protection Agency (U.S. EPA) has set primary national ambient air quality standards for ozone and other air pollutants to define the levels considered safe for human health. The California Air Resources Board (CARB) has also set California air quality standards. The Bay Area is a non-attainment area for the state one-hour standard and new federal eight-hour standard, and is unclassified for the new California eight-hour ozone standard. Under State law, non-attainment areas must prepare plans showing how they will attain the state standard. The 2005 Ozone Strategy is the most recent planning document for the State one-hour ozone standard. Because the Bay Area is a marginal non-attainment area for the national eight-hour standard, the least severe non-attainment classification, the BAAQMD is not required to prepare an attainment plan for the national standard.

The 2005 Ozone Strategy includes measures to reduce emissions of the pollutants that form ozone, i.e., NOx and volatile organic compounds (VOCs). These measures may be proposals to adopt new regulations or amendments to existing regulations. The 2005 Ozone Strategy also includes further study measures. Further study measures require additional analysis before the District can determine whether to proceed with rulemaking or implementation. Further study measures proposed examining potential control of emissions from internal combustion engines by expanding the scope of the rule.

Reduction of NOx emissions from stationary internal combustion engines is a further study measure (FS-15) in the 2005 Ozone Strategy.

**Proposed Rule**

The District is proposing amendments to Regulation 9, Rule 8 (Rule 9-8) to provide the maximum feasible NOx reduction and to reduce PM levels and ground level ozone in the Bay Area and neighboring air basins. These standards reflect best technology advancements since this rule was last amended. The District is proposing amendments that would change the current rule in three primary ways.

1) Rule 9-8 would be expanded to apply to IC engines in the range of 50 to 250 bhp. Currently, emission limits of the rule apply only to engines of 250 bhp or more.
2) The amendments propose to include liquid-fueled engines, such as diesel-fired engines. The emission limits of the rule currently only apply to gaseous-fueled engines, which are primarily natural gas- and LPG-fueled engines.
3) NOx emissions limits would be reduced to reflect the most stringent existing limits in the State.

The proposed amendments reflect emission limits achievable with the most stringent demonstrated retrofit control technology available for spark-ignited engine sizes of greater than 50 bhp. The proposed amendments would also incorporate the more stringent future-effective U.S. EPA standards for diesel engines for NOx and CO. Existing spark ignited engines and compression ignited engines would have to be in compliance with the more stringent standards by 2012. Separate standards are provided for SI and CI engines powered by waste-derived fuels such as landfill and digester gas.

Operators of existing CI engines or SI engines of model year 1996 or later and small (50 – 250 bhp) SI engines could elect to comply with more stringent standards in 2016. The 2016 standards would reflect EPA Tier 4 standards of 22 ppm NOx and 310 ppm CO or Best Available Control Technology (BACT) at that time for CI engines. BACT would apply for SI engines.

Requiring standards consistent with compliance with the U.S. EPA Tier 3 or Interim Tier 4 standards for NOx and CO would ensure that operators replacing or retrofitting engines to comply with the CI Engine ATCM would also meet the federal NOx and CO emissions standards for new engines. The U.S. EPA standards only affect new diesel engines and only 50 percent of new engines offered for sale nationwide in each model year are required to meet those standards. Further, because compression-ignited engines generally have long operating lives (10 to 20 years), there is the possibility that facilities could operate diesel engines for many years to come that emit higher levels of NOx than is specified in the U.S. EPA Tiered Standards.

The proposed amendments would allow the operators of those engines no older than model year 1996 until 2016 to comply with the emissions limits of the rule. The final tiered standards for NOx and CO begin to take effect starting in 2013. This extra time

would provide an opportunity for the operators of more recently purchased engines to recoup most of the useful operating life of their diesel engines. The proposed amendments are summarized in Table 2-1.

**TABLE 2-1**
**Summary of Proposed NOx Emission Limits for Existing Prime IC Engines**

| **Engine Type and Fuel** | **Existing Engines** | |
|---|---|---|
| | Emission Limits (ppmv, dry @ 15% $O_2$) | Compliance Dates |
| Compression-Ignited (All Engines 51 to 175 bhp) | 180 | January 2012 |
| Compression-Ignited (All Engines greater than 175 bhp) | 110 | January 2012 |
| Compression-Ignited (Alt. limits for 1996 or later) | 22 or BACT at time of compliance | January 2016 |
| Spark-Ignited: Gaseous & Liquid | 25 (rich[a]) 65 (lean[b]) | January 2012 |
| Spark-Ignited Waste Gas | 70 | January 2012 |
| Spark-Ignited (Alt. limits for 1996 or later or sized less than 250 bhp) | BACT at time of compliance | January 2016 |

a. Rich burn engines operate using an air to fuel ratio that is close to the stoichiometric balance (excess fuel); this combustion ratio results in a small fraction of the fuel remaining uncombusted and exiting in the exhaust stream.
b. Lean burn engines operate with excess air and can result in increased formation of NOx.

The proposed NOx emission reductions for stationary IC engines greater than 50 bhp are summarized in Table 2-2. The proposed PM emission reductions are shown in Table 2-3.

**TABLE 2-2**
**NOx Emissions by Fuel Used and Engine Type for the Current and Proposed Amendments to Rule 9-8**

| Fuel Type | Engine Type | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Emergency Standby (tpd) | | Low Usage (tpd) | | Prime (tpd) | | All Engines (tpd) | |
| | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions |
| Diesel, Fuel Oil, Jet Fuel | 3.1 | 1.4 | 0.07 | 0 | 3.6 | 2.8 | 6.8 | 4.2 |
| Spark-Ignited Fossil Fuels | 0.04 | 0.01 | 0 | 0 | 2.4 | 1.6 | 2.4 | 1.6 |
| Spark-Ignited Waste Fuels | 0 | 0 | 0 | 0 | 5.6 | 3.8 | 5.6 | 3.8 |
| **Emissions Totals** | **3.1** | **1.4** | **0.07** | **0** | **11.6** | **8.2** | **14.8** | **9.6** |
| **Percent Reductions** | **45%** | | **0%** | | **71%** | | **65%** | |

**TABLE 2-3**
**PM Emissions by Fuel Used and Engine Type for the Current and Proposed Amendments to Rule 9-8**

| Fuel Type | Engine Type | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Emergency Standby (tpd) | | Low Usage (tpd) | | Prime (tpd) | | All Engines (tpd) | |
| | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions | Current Emissions | Emission Reductions |
| Diesel, Fuel Oil, Jet Fuel | 0.39 | 0.11 | 0.01 | 0 | 0.45 | 0.39 | 0.85 | 0.53 |
| Spark-Ignited Fossil Fuels | 0 | 0 | 0 | 0 | 0.30 | 0.20 | 0.30 | 0.20 |
| Spark-Ignited Waste Fuels | 0 | 0 | 0 | 0 | 0.69 | 0.48 | 0.69 | 0.48 |
| **Emissions Totals** | **0.39** | **0.11** | **0.01** | **0** | **1.44** | **1.07** | **1.84** | **1.21** |
| **Percent Reductions** | **27%** | | **0%** | | **74%** | | **66%** | |

There are three primary approaches for emissions reduction control for stationary IC engines: 1) Combustion Modification; 2) Fuel Switching; and 3) Post Combustion (Exhaust) Controls. Combustion modifications affect the way fuel is combusted or "burned." Some of these techniques include changing the air to fuel ratio, reducing the peak combustion temperature, shortening the residence time at high temperatures, or adjusting the ignition or injection timing. Fuel switching involves using another fuel that produces less NOx or PM, such as clean diesel fuel or methanol.

The primary means to treat NOx emissions after they are created (post combustion control) is either by chemically reacting the NOx with ammonia or urea in the presence of a catalyst to convert the NOx back into nitrogen or by the use of a noble metal that reduces NOx, CO and hydrocarbons. The first process is referred to as Selective Catalytic Reduction (SCR) and has been shown to be over 90 percent effective at reducing NOx. The second process is referred to as Non-Selective Catalytic Reduction (NSCR) and has demonstrated a control effectiveness of greater than 95 percent for NOx. These control technologies have varying degrees of effectiveness for NOx control and some, while reducing NOx, may result in the increase of other criteria pollutants.

**Affected Area**

The proposed rule amendments would apply to facilities with IC engines within the BAAQMD jurisdiction. The BAAQMD jurisdiction includes all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma counties (approximately 5,600 square miles). The San Francisco Bay Area is characterized by a large, shallow basin surrounded by coastal mountain ranges tapering into sheltered inland valleys. The combined climatic and topographic factors result in increased potential for the accumulation of air pollutants in the inland valleys and reduced potential for buildup of air pollutants along the coast. The Basin is bounded by the Pacific Ocean to the west and includes complex terrain consisting of coastal mountain ranges, inland valleys, and bays.

The facilities affected by the proposed rule amendments are located within the jurisdiction of the Bay Area Air Quality Management District (see Figure 1).

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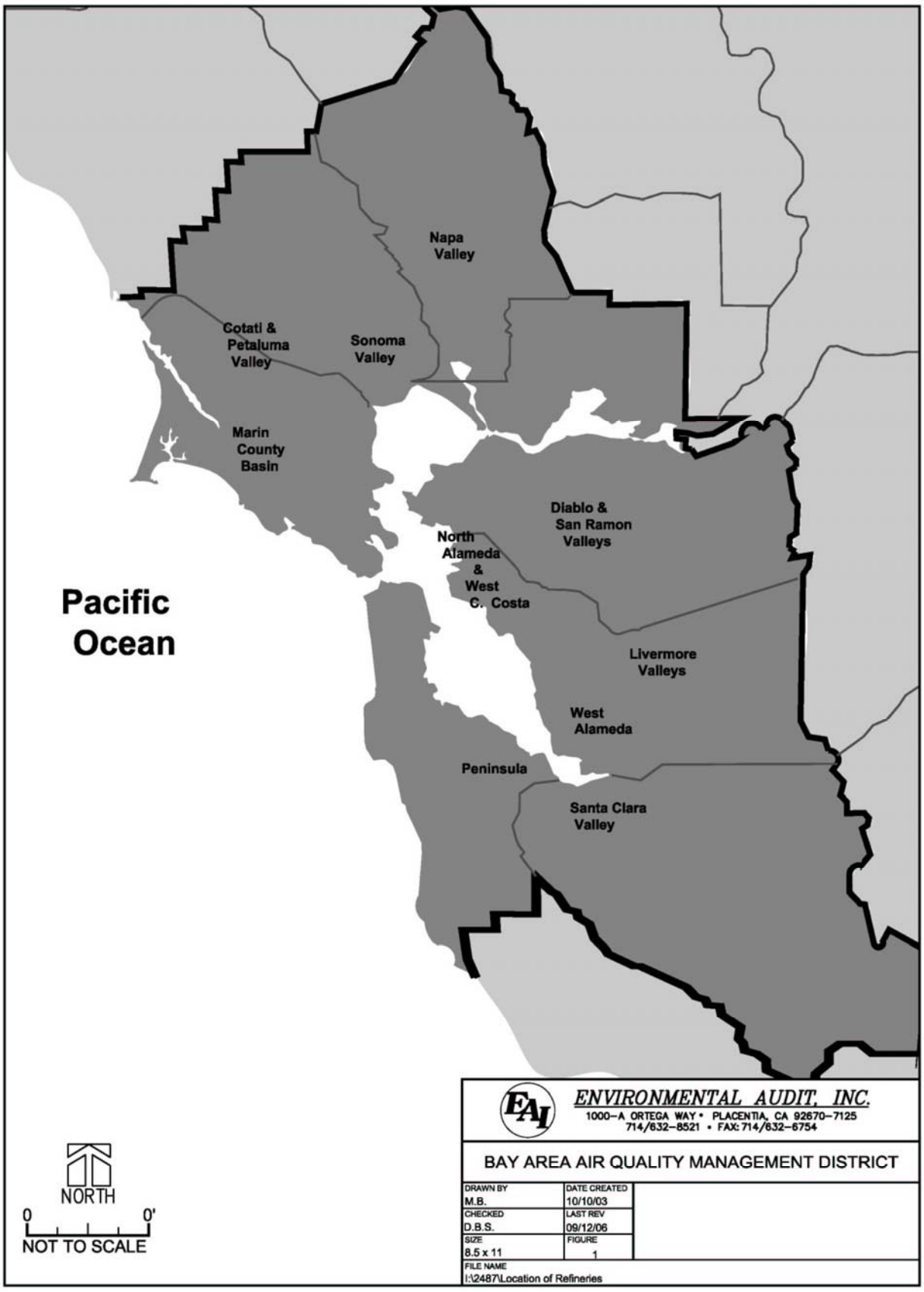
Napa Valley
Cotati & Petaluma Valley
Sonoma Valley
Marin County Basin
Diablo & San Ramon Valleys
North Alameda & West C. Costa
Pacific Ocean
Livermore Valleys
West Alameda
Peninsula
Santa Clara Valley
NORTH
0 0'
NOT TO SCALE
ENVIRONMENTAL AUDIT, INC.
1000-A ORTEGA WAY • PLACENTIA, CA 92670-7125
714/632-8521 • FAX: 714/632-6754
BAY AREA AIR QUALITY MANAGEMENT DISTRICT
DRAWN BY M.B.
DATE CREATED 10/10/03
CHECKED D.B.S.
LAST REV 09/12/06
SIZE 8.5 x 11
FIGURE 1
FILE NAME I:\2487\Location of Refineries

**Chapter 3**

# Environmental Checklist

## ENVIRONMENTAL CHECKLIST FORM

| | |
|---|---|
| **1. Project Title:** | Bay Area Air Quality Management District (BAAQMD) Proposed Amendments to Regulation 9, Rule 8. |
| **2. Lead Agency Name and Address:** | Bay Area Air Quality Management District<br>939 Ellis Street<br>San Francisco, California 94109 |
| **3. Contact Person and Phone Number:** | Victor Douglas<br>Planning, Rules and Research Division<br>415/749-4752 or vdouglas@baaqmd.gov |
| **4. Project Location:** | The proposed rule amendments apply to the area within the jurisdiction of the Bay Area Air Quality Management District, which encompasses all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. |
| **5. Project Sponsor's Name and Address:** | Bay Area Air Quality Management District<br>939 Ellis Street<br>San Francisco, California 94109 |
| **6. General Plan Designation:** | The rule amendments apply to facilities with stationary IC engines that are usually located in or industrial or commercial areas. |
| **7. Zoning** | The rule amendments apply to facilities with stationary IC engines that are usually located in industrial or commercial areas. |
| **8. Description of Project** | See "Background" in Chapter 2. |
| **9. Surrounding Land Uses and Setting** | See "Affected Area" in Chapter 2. |
| **10. Other Public Agencies Whose Approval Is Required** | None |

## Environmental Factors Potentially Affected:

The environmental factors checked below would potentially be affected by this Project (i.e., the project would involve one impact that is a "Potentially Significant Impact"), as indicated by the checklist on the following pages.

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Agriculture Resources | ☐ Air Quality |
| ☐ Biological Resources | ☐ Cultural Resources | ☐ Geology/Soils |
| ☐ Hazards & Hazardous Materials | ☐ Hydrology/Water Quality | ☐ Land Use/Planning |
| ☐ Mineral Resources | ☐ Noise | ☐ Population/Housing |
| ☐ Public Services | ☐ Recreation | ☐ Transportation/Traffic |
| ☐ Utilities/Service Systems | ☐ Mandatory Findings of Significance | |

## Determination:

On the basis of this initial evaluation:

☑ I find the proposed project COULD NOT have a significant effect on the environment, and that a NEGATIVE DECLARATION will be 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 to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" 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 IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Signature Date

_____ _____

Printed Name For

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | 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 along a 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 that would adversely affect daytime or nighttime views in the area? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses

Many of the facilities with stationary IC engines affected by the proposed rule amendments are located in industrial and commercial and areas throughout the Bay Area.

# Regulatory Background

Visual resources are generally protected by the City and/or County General Plans through land use and zoning requirements.

# Discussion of Impacts

I a-b. The proposed amendments to Regulation 9, Rule 8 (Rule 9-8) would further reduce NOx and PM emissions from stationary IC engines in order to improve air quality in the Bay Area and reduce transport of air pollutants to neighboring air basins.

Implementation of the proposed project is expected to involve construction activities related to the installation or modification of air pollution control equipment at industrial, commercial, and

institutional facilities. However, the construction activities are not expected to adversely impact views and aesthetics since most of the heavy equipment and activities are expected to occur within each facility and are not expected to be visible to areas outside each facility. The majority of the construction equipment is expected to be low in height and not visible to the surrounding area due to existing fencing along the property lines and existing structures currently within the facilities that would buffer the views of the construction activities. Further, the construction activities are expected to be temporary in nature and will cease following completion of the equipment installation or modifications.

Depending on the control equipment, the proposed project could potentially introduce minor visual changes at some facilities. The affected new and/or modified units, depending upon their locations within each facility, could potentially be visible to areas outside of each facility. However, the affected new and/or modified units are expected to be about the same size profile as existing equipment present at each affected facility. The general appearance of the affected new and/or modified units is not expected to differ significantly from other equipment units such that no significant adverse impacts to aesthetics are expected. Further, scenic highways or corridors are not generally located in the vicinities of the affected facilities such that the proposed project is not expected to obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings.

I. c-d. During the course of construction activities, new sources of substantial light or glare which would adversely affect day or nighttime views of an area are not expected as the installation of add-on air pollution control equipment or modification to the engines are expected to occur during business hours. If additional lighting is deemed necessary, it is expected to be provided in accordance with applicable safety standards as a result of the proposed project and the lights are not expected to create light and glare impacts to areas adjacent to the facilities. In all likelihood, the lighting is expected to be consistent with existing lighting at the affected facilities. Further, any installation of new or replacement of existing add-on control equipment at the existing facilities, either inside or outside the existing structures, would not appreciably change the visual profile of the entire facility.

Therefore, no significant adverse aesthetic impacts are expected due to the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **II.** | **AGRICULTURE RESOURCES.** | | | | |
| In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. 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 conflict with a Williamson Act contract? | ☐ | ☐ | ☐ | ☑ |
| c) | Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. Some of these agricultural lands are under Williamson Act contracts.

The facilities with stationary IC engines affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area. Agricultural resources are generally not located in the vicinity of heavy industrial or commercially developed areas.

# Regulatory Background

Agricultural resources are generally protected by the City and/or County General Plans, Community Plans through land use and zoning requirements, as well as any applicable specific plans, ordinances, local coastal plans, and redevelopment plans.

# Discussion of Impacts

II a-c. The proposed amendments to Rule 9-8 would further reduce NOx and PM emissions from stationary IC engines and improve air quality in the Bay Area and reduce transport of air pollutants to neighboring air basins. Facilities are expected to comply by replacing or retrofitting engines with RACT / BARCT technologies. Installation of emission control devices on stationary IC engines would not result in increasing the size of industrial or commercial facilities, or result in additional construction activities outside of the confines of the current facilities. Further, affected facilities are generally located in industrial and commercially zoned areas, so no impact on agricultural resources is expected. Therefore, no adverse significant impacts to agricultural resources are expected due to the proposed project.

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **III. AIR QUALITY** | | | | |
| When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. 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 a non-attainment area for 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)? | ☐ | ☐ | ☐ | ☑ |

# Setting

### Meteorological Conditions

The summer climate of the West Coast is dominated by a semi-permanent high pressure area centered over the northeastern Pacific Ocean. Because this high pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus the conditions that persist along the coast of California during summer are a northwest air flow and negligible precipitation. A thermal low pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the San Francisco Bay Area much of the summer.

In winter, the Pacific High weakens and shifts southward, upwelling ceases, and winter storms become frequent. Almost all of the Bay Area's annual precipitation takes place in the November through April period. During the winter rainy periods, inversions are weak or nonexistent, winds are often moderate and air pollution potential is very low. During winter periods when the Pacific high becomes dominant, inversions become strong and often are surface based; winds are light and pollution potential is high. These periods are characterized by winds that flow out of the Central Valley into the Bay Area and often include fog.

Topography

The San Francisco Bay Area is characterized by complex terrain consisting of coastal mountain ranges, inland valleys and bays. Elevations of 1,500 feet are common in the higher terrain of this area. Normal wind flow over the area becomes distorted in the lower elevations, especially when the wind velocity is not strong. This distortion is reduced when stronger winds and unstable air masses move over the areas. The distortion is greatest when low level inversions are present with the surface air, beneath the inversion, flowing independently of the air above the inversion.

Winds

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate produces a jet that sweeps eastward but widens downstream producing southwest winds at Berkeley and northwest winds at San Jose; a branch curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Carquinez Strait, the Golden Gate, or San Bruno Gap.

In winter, the Bay Area experiences periods of storminess and moderate-to-strong winds and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, week onshore flows in the afternoon and otherwise light and variable winds.

Temperature

In summer, the distribution of temperature near the surface over the Bay Area is determined in large part by the effect of the differential heating between land and water surfaces. This process produces a large-scale gradient between the coast and the Central Valley as well as small-scale local gradients along the shorelines of the ocean and bays. The winter mean temperature high and lows reverse the summer relationship; daytime variations are small while mean minimum nighttime temperatures show large differences and strong gradients. The moderating effect of the ocean influences warmer minimums along the coast and penetrating the Bay. The coldest temperatures are in the sheltered valleys, implying strong radiation inversions and very limited vertical diffusion.

Inversions

A primary factor in air quality is the mixing depth, i.e., the vertical dimension available for dilution of contaminant sources near the ground. Over the Bay Area the frequent occurrence of temperature inversions limits this mixing depth and consequently limits the availability of air for dilution. A temperature inversion may be described as a layer or layers of warmer air over cooler air.

Precipitation

The San Francisco Bay Area climate is characterized by moderately wet winters and dry summers. Winter rains (December through March) account for about 75 percent of the average annual rainfall; about 90 percent of the annual total rainfall is received in November to April period; and between June and September, normal rainfall is typically less than 0.10 inches. Annual precipitation amounts show greater differences in short distances. Annual totals exceed 40 inches in the mountains and are less than 15 inches in the sheltered valleys.

Pollution Potential

The Bay Area is subject to a combination of physiographic and climatic factors which result in a low potential for pollutant buildups near the coast and a high potential in sheltered inland valleys. In summer, areas with high average maximum temperatures tend to be sheltered inland valleys with abundant sunshine and light winds. Areas with low average maximum temperatures are exposed to the prevailing ocean breeze and experience frequent fog or stratus. Locations with warm summer days have a higher pollution potential than the cooler locations along the coast and bays.

In winter, pollution potential is related to the nighttime minimum temperature. Low minimum temperatures are associated with strong radiation inversions in inland valleys that are protected from the moderating influences of the ocean and bays. Conversely, coastal locations experience higher average nighttime temperatures, weaker inversions, stronger breezes and consequently less air pollution potential.

**Air Quality**

Criteria Pollutants

It is the responsibility of the BAAQMD to ensure that State and federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide ($NO_2$), particulate matter less than 10 microns in diameter (PM10), particulate matter less than 2.5 microns in diameter (PM2.5), sulfur dioxide ($SO_2$) and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride.

The State and national ambient air quality standards for each of these pollutants and their effects on health are summarized in Table 3-1. The BAAQMD monitors levels of various criteria pollutants at 26 monitoring stations. The 2005 air quality data from the BAAQMD's monitoring stations are presented in Table 3-2.

Air quality conditions in the San Francisco Bay Area have improved since the Air District was created in 1955. Ambient concentrations of air pollutants and the number of days on which the region exceeds air quality standards have fallen dramatically (see Table 3-3). The Air District is in attainment of the State and federal ambient air quality standards for CO, nitrogen dioxide ($NO_2$), and sulfur dioxide ($SO_2$). The Air District is not considered to be in attainment with the State PM10 and PM2.5 standards, and is unclassified for the new federal 24-hour PM2.5 standard. The Bay Area is designated as a non-attainment area for the California one-hour ozone standard.

The 2005 air quality data from the BAAQMD monitoring stations are presented in Table 3-2. All monitoring stations were below the State and federal ambient air quality standards for CO, $NO_2$, and $SO_2$. The federal eight-hour standard was exceeded on two days in the District in 2005. The State one-hour ozone standard was exceeded in the District on nine days in 2005; most frequently in the Eastern District (Livermore) (see Table 3-2).

All monitoring stations were in compliance with the federal PM10 standards. The California PM10 standards were exceeded on 12 days in 2005, most frequently in San Jose. The Air District did not exceed the federal PM2.5 standard in 2005 (see Table 3-2).

## TABLE 3-1

## FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

| | STATE STANDARD | FEDERAL PRIMARY STANDARD | MOST RELEVANT EFFECTS |
|---|---|---|---|
| AIR POLLUTANT | CONCENTRATION/ AVERAGING TIME | CONCENTRATION/ AVERAGING TIME | |
| Ozone | 0.09 ppm, 1-hr. avg. > 0.070 ppm, 8-hr | 0.08 ppm, 8-hr avg. > | (a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage |
| Carbon Monoxide | 9.0 ppm, 8-hr avg. > 20 ppm, 1-hr avg. > | 9 ppm, 8-hr avg.> 35 ppm, 1-hr avg.> | (a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses |
| Nitrogen Dioxide | 0.25 ppm, 1-hr avg. > | 0.053 ppm, ann. avg.> | (a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration |
| Sulfur Dioxide | 0.04 ppm, 24-hr avg.> 0.25 ppm, 1-hr. avg. > | 0.03 ppm, ann. avg.> 0.14 ppm, 24-hr avg.> | (a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma |
| Suspended Particulate Matter (PM10) | 20 $\mu g/m^3$, annarithmetic mean > 50 $\mu g/m^3$, 24-hr average> | 50 $\mu g/m^3$, annual arithmetic mean > 150 $\mu g/m^3$, 24-hr avg.> | (a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children |
| Suspended Particulate Matter (PM2.5) | 12 $\mu g/m^3$, annual arithmetic mean> | 15 $\mu g/m^3$, annual arithmetic mean> 35 $\mu g/m^3$, 24-hour average> | Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease; elderly; children. |
| Sulfates | 25 $\mu g/m^3$, 24-hr avg. >= | | (a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage |
| Lead | 1.5 $\mu g/m^3$, 30-day avg. >= | 1.5 $\mu g/m^3$, calendar quarter> | (a) Increased body burden; (b) Impairment of blood formation and nerve conduction |
| Visibility-Reducing Particles | In sufficient amount to give an extinction coefficient >0.23 inverse kilometers (visual range to less than 10 miles) with relative humidity less than 70%, 8-hour average (10am – 6pm PST) | | Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent |

# TABLE 3-2
# BAY AREA AIR POLLUTION SUMMARY 2005

| MONITORING STATIONS | Ozone | | | | | | | CARBON MONOXIDE | | | NITROGEN DIOXIDE | | | SULFUR DIOXIDE | | | PM10 | | | | PM2.5 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max 1-Hr | Nat Days | Cal Days | 3-Yr Avg | Max 8-Hr | Nat Days | 3-Yr Avg | Max 1-Hr | Max 8-Hr | Nat/ Cal Days | Max 1-Hr | Ann Avg | Nat/ Cal Days | Max 24-Hr | Ann Avg | Nat/ Cal Days | Ann Avg | Max 24-Hr | Nat Day | Cal Days | Max 24-Hr | Nat Days | 3-Yr Avg | Ann Avg | 3-Yr Avg |
| **NORTH COUNTIES** | (ppb) | | | | | | | (ppm) | | | (ppb) | | | (ppb) | | | ($\mu g/m^3$) | | | | ($\mu g/m^3$) | | | ($\mu g/m^3$) | |
| Napa | 91 | 0 | 0 | 0 | 67 | 0 | 61 | 3.2 | 2.0 | 0 | 60 | 10 | 0 | -- | -- | -- | 18.0 | 40 | 0 | 0 | -- | -- | -- | -- | -- |
| San Rafael | 81 | 0 | 0 | 0 | 59 | 0 | 51 | 3.0 | 1.7 | 0 | 54 | 13 | 0 | -- | -- | -- | 16.5 | 39 | 0 | 0 | -- | -- | -- | -- | -- |
| Santa Rosa | 72 | 0 | 0 | 0 | 51 | 0 | 49 | 2.5 | 2.0 | 0 | 47 | 11 | 0 | -- | -- | -- | 15.9 | 39 | 0 | 0 | 33.6 | 0 | 28.2 | 7.6 | 8.2 |
| Vallejo | 90 | 0 | 0 | 0 | 70 | 0 | 60 | 3.9 | 3.1 | 0 | 70 | 11 | 0 | 5 | 1.2 | 0 | 17.3 | 52 | 0 | 1 | 43.8 | 0 | 32.5 | 9.7 | 10 |
| **COAST & CENTRAL BAY** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Oakland | 68 | 0 | 0 | 0.0 | 45 | 0 | 39 | 3.4 | 2.4 | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Richmond | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6 | 1.1 | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| San Francisco | 58 | 0 | 0 | 0.0 | 54 | 0 | 48 | 2.5 | 2.1 | 0 | 66 | 16 | 0 | 7 | 1.4 | 0 | 20.1 | 46 | 0 | 0 | 43.6 | 0 | 32.6 | 9.5 | 9.9 |
| San Pablo | 66 | 0 | 0 | 0.0 | 57 | 0 | 52 | 2.8 | 1.3 | 0 | 54 | 12 | 0 | 6 | 1.7 | 0 | 19.0 | 42 | 0 | 0 | -- | -- | -- | -- | -- |
| **EASTERN DISTRICT** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bethel Island | 89 | 0 | 0 | 0.0 | 77 | 0 | 72 | 1.1 | 0.9 | 0 | 38 | 7 | 0 | 6 | 2.0 | 0 | 18.5 | 64 | 0 | 1 | -- | -- | -- | -- | -- |
| Concord | 98 | 0 | 1 | 0.0 | 80 | 0 | 73 | 2.2 | 1.5 | 0 | 55 | 12 | 0 | 7 | 1.0 | 0 | 16.4 | 42 | 0 | 0 | 48.9 | 0 | 35.1 | 9 | 9.8 |
| Crockett | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fairfield | 90 | 0 | 0 | 0.0 | 73 | 0 | 68 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Livermore | 120 | 0 | 6 | 0 | 90 | 1 | 78 | 3.4 | 1.8 | 0 | 72 | 14 | 0 | -- | -- | -- | 18.8 | 49 | 0 | 0 | 32.1 | 0 | 29.4 | 9 | 9.4 |
| Martinez | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7 | 1.7 | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pittsburg | 94 | 0 | 0 | 0.0 | 78 | 0 | 69 | 3.3 | 1.7 | 0 | 58 | 11 | 0 | 9 | 2.4 | 0 | 20.1 | 57 | 0 | 1 | -- | -- | -- | -- | -- |
| **SOUTH CENTRAL BAY** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fremont | 105 | 0 | 1 | 0.0 | 78 | 0 | 60 | 3.2 | 2.0 | 0 | 69 | 15 | 0 | -- | -- | -- | 17.8 | 54 | 0 | 1 | 33.4 | 0 | 27.6 | 9 | 9 |
| Hayward | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Redwood City | 84 | 0 | 0 | 0.0 | 61 | 0 | 57 | 4.5 | 2.3 | 0 | 62 | 15 | 0 | -- | -- | -- | 20.9 | 81 | 0 | 2 | 30.9 | 0 | 27.8 | 8.8 | 9 |
| San Leandro | 99 | 0 | 1 | 0.0 | 61 | 0 | 52 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **SANTA CLARA VALLEY** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gilroy | 87 | 0 | 0 | 0.0 | 67 | 0 | 71 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Los Gatos | 110 | 0 | 3 | 0.0 | 87 | 1 | 72 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| San Jose Central* | 113 | 0 | 1 | * | 80 | 0 | 61 | 4.3 | 3.1 | 0 | 74 | 19 | 0 | -- | -- | -- | 22.3 | 54 | 0 | 2 | 54.6 | 0 | 39 | 11.8 | 11.7 |
| San Jose East | 110 | 0 | 1 | 0.0 | 83 | 0 | 59 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| San Jose, Tully Road | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24.2 | 71 | 0 | 4 | 50.6 | 0 | 35.9 | 10.5 | 10.3 |
| San Martin | 108 | 0 | 2 | 0.0 | 77 | 0 | 75 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sunnyvale | 97 | 0 | 1 | 0.0 | 73 | 0 | 64 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Total Bay Area Days over Standard** | | **0** | **9** | | | **2** | | | | **0** | | | **0** | | | **0** | | | **0** | **12** | | **0** | | | |

(ppm) = parts per million, ($\mu g/m^3$) =micrograms per cubic meter, (ppb) = parts per billion

## TABLE 3-3

## TEN-YEAR BAY AREA AIR QUALITY SUMMARY

**Days over standards**

| YEAR | OZONE | | | CARBON MONOXIDE | | | | $NO_X$ | SULFUR DIOXIDE | | PM10 | | PM2.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1-Hr | | 8-Hr | 1-Hr | | 8-Hr | | 1-Hr | 24-Hr | | 24-Hr* | | 24-Hr** |
| | Nat | Cal | Nat | Nat | Cal | Nat | Cal | Cal | Nat | Cal | Nat | Cal | Nat |
| 1996 | 8 | 34 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | - |
| 1997 | 0 | 8 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | - |
| 1998 | 8 | 29 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | - |
| 1999 | 3 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | - |
| 2000 | 3 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 |
| 2001 | 1 | 15 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 5 |
| 2002 | 2 | 16 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 |
| 2003 | 1 | 19 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| 2004 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 |
| 2005 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |

* PM10 is sampled every sixth day – actual days over standard can be estimated to be six times the numbers listed.
** 2000 is the first full year for which the Air District measured PM2.5 levels.

### Toxic Air Pollutants

The BAAQMD maintains a network of monitoring stations to monitor certain toxic air contaminants (TACs) in ambient air. In addition, the California Air Resources Board (CARB) maintains several monitoring stations in the Bay Area as part of a statewide toxics monitoring effort. Table 3-4 shows the maximum, minimum and mean concentration of toxic air contaminants at 22 of the 23 separate sites at which samples were collected. Data from the Fort Cronkhite "clean-air" background site were not included.

**TABLE 3-4**

**SUMMARY OF BAY AREA AMBIENT AIR TOXIC AIR CONTAMINANT MONITORING DATA - 2002[1]**

| COMPOUND | Level of Detection (ppb) | % of Samples < LOD | Maximum Conc. (ppb) | Minimum Conc. (ppb) | Mean Conc. (ppb) |
|---|---|---|---|---|---|
| Benzene | 0.10 | 0 | 2.20 | <0.10 | 0.47 |
| Carbon Tetrachloride (CCl4) | 0.01 | 0 | 0.36 | <0.01 | 0.11 |
| Chloroform (CHCl3) | 0.02 | 65 | 0.12 | <0.02 | 0.02 |
| Methylene Chloride (DCM) | 0.50 | 85 | 8.70 | <0.50 | 0.38 |
| Ethylene Dibromide | 0.02 | 100 | <0.02 | <0.02 | 0.01 |
| Ethylene Dichloride | 0.10 | 100 | <0.10 | <0.10 | 0.05 |
| Methyl Tert-Butyl Ether (MTBE) | 0.50 | 44 | 4.60 | <0.50 | 0.75 |
| Perchloroethylene | 0.01 | 24 | 0.30 | <0.01 | 0.05 |
| 1,1,1-Trichloroethane (TCA) | 0.05 | 47 | 2.69 | <0.05 | 0.11 |
| Trichloroethylene | 0.08 | 96 | 0.84 | <0.08 | 0.04 |
| Toluene | 0.10 | 0 | 24.9 | 0.10 | 1.48 |
| Vinyl Chloride | 0.30 | 100 | <0.30 | <0.30 | 0.15 |

(1) BAAQMD, Toxic Air Contaminant, 2002 Annual Report, June 2004.

# Regulatory Background

Criteria Pollutants

At the federal level, the Clean Air Act (CAA) Amendments of 1990 give the U.S. EPA additional authority to require states to reduce emissions of ozone precursors and particulate matter in non-attainment areas. The amendments set attainment deadlines based on the severity of problems. At the state level, CARB has traditionally established state ambient air quality standards, maintained oversight authority in air quality planning, developed programs for reducing emissions from motor vehicles, developed air emission inventories, collected air quality and meteorological data, and approved state implementation plans. At a local level, California's air districts, including the BAAQMD, are responsible for overseeing stationary source emissions, approving permits, maintaining emission inventories, maintaining air quality stations,

overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA.

The BAAQMD is governed by a 22-member Board of Directors composed of publicly-elected officials apportioned according to the population of the represented counties. The Board has the authority to develop and enforce regulations for the control of air pollution within its jurisdiction. The BAAQMD is responsible for implementing emissions standards and other requirements of federal and state laws. It is also responsible for developing air quality planning documents required by both federal and state laws.

Toxic Air Contaminants

TACs are regulated in the District through federal, state, and local programs. At the federal level, TACs are regulated primarily under the authority of the CAA. Prior to the amendment of the CAA in 1990, source-specific National Emission Standards for Hazardous Air Pollutants (NESHAPs) were promulgated under Section 112 of the CAA for certain sources of radionuclides and Hazardous Air Pollutants (HAPs).

Title III of the 1990 CAA amendments requires U.S. EPA to promulgate NESHAPs on a specified schedule for certain categories of sources identified by U.S. EPA as emitting one or more of the 189 listed HAPs. Emission standards for major sources must require the maximum achievable control technology (MACT). MACT is defined as the maximum degree of emission reduction achievable considering cost and non-air quality health and environmental impacts and energy requirements. All NESHAPs were to be promulgated by the year 2000. Specific incremental progress in establishing standards must be made by the years 1992 (at least 40 source categories), 1994 (25 percent of the listed categories), 1997 (50 percent of remaining listed categories), and 2000 (remaining balance). The 1992 requirement was met; however, many of the four-year standards were not promulgated as scheduled. Promulgation of those standards has been rescheduled based on court ordered deadlines, or the aim to satisfy all Section 112 requirements in a timely manner.

Many of the sources of TACs that have been identified under the CAA are also subject to the California TAC regulatory programs. CARB developed three regulatory programs for the control of TACs. Each of the programs is discussed in the following subsections.

**Control of TACs Under the TAC Identification and Control Program:** California's TAC identification and control program, adopted in 1983 as Assembly Bill 1807 (AB 1807) (California Health and Safety Code §39662), is a two-step program in which substances are identified as TACs, and airborne toxic control measures (ATCMs) are adopted to control emissions from specific sources. Since adoption of the program, CARB has identified 18 TACs, and CARB adopted a regulation designating all 189 federal HAPs as TACs.

**Control of TACs Under the Air Toxics "Hot Spots" Act:** The Air Toxics Hot Spot Information and Assessment Act of 1987 (AB 2588) (California Health and Safety Code §39656) establishes a state-wide program to inventory and assess the risks from facilities that emit TACs and to notify the public about significant health risks associated with those emissions. Inventory reports must be updated every four years under current state law. The BAAQMD uses a maximum individual cancer risk of 10 in one million, or an ambient concentration above a non-cancer reference exposure level, as the threshold for notification.

Senate Bill (SB) 1731, enacted in 1992 (California Health and Safety Code §44390 et seq.), amended AB 2588 to include a requirement for facilities with significant risks to prepare and implement a risk reduction

plan which will reduce the risk below a defined significant risk level within specified time limits. At a minimum, such facilities must, as quickly as feasible, reduce cancer risk levels that exceed 100 per one million. The BAAQMD adopted risk reduction requirements for perchloroethylene dry cleaners to fulfill the requirements of SB 1731.

**Targeted Control of TACs Under the Community Air Risk Evaluation Program:** In 2004, BAAQMD established the Community Air Risk Evaluation (CARE) program to identify locations with high emissions of toxic air contaminants (TACs) and high exposures of sensitive populations to TACs and to use this information to help establish policies to guide mitigation strategies that obtain the greatest health benefit from TACs emission reductions. For example, BAAQMD will use information derived from the CARE program to develop and implement targeted risk reduction programs, including grant and incentive programs, community outreach efforts, collaboration with other governmental agencies, model ordinances, new regulations for stationary sources and indirect sources, and advocacy for additional legislation.

# Discussion of Impacts

III a. The objective of the proposed amendments to Rule 9-8 is to reduce PM and NOx emissions from stationary IC engines in order to reduce particulate matter and ozone levels in the Bay Area. The District is proposing amendments to Rule 9-8, in accordance with the District's SB 656 Particulate Matter Implementation Schedule as a means to reduce stationary IC engines emissions of PM and NOx in the Bay Area. Therefore, the proposed regulation is in compliance with and will implement a portion of local air quality strategies. No significant adverse impacts to air quality plans are expected.

III b, c, d and f. The District is proposing amendments to Rule 9-8, in accordance with the District's SB 656 Particulate Matter Implementation Schedule as a means to reduce stationary IC engines emissions of PM and NOx in the Bay Area. NOx is an ozone precursor, and also contributes to indirect or secondary PM. SB 656 requires that all air districts in California adopt an implementation schedule that prioritizes appropriate measures for reducing PM emissions. The District's Particulate Matter Implementation Schedule proposes to adopt amendments to Rule 9-8 as a measure to reduce direct and indirect PM emissions in the Bay Area.

Since the adoption of Rule 9-8 in 1993, several rules and regulations have been implemented that affect stationary IC engines in California. In 1998 and 2004, the U.S. EPA promulgated the Off-Road Compression-Ignition (Diesel) Engine Tiered Standards (Federal Off-Road Tiered Standards) which formed the New Source Performance Standards for Off-Road Compression-Ignited Engine. These tiered standards apply to new diesel engines and become progressively more stringent as model years advance. In 2001, CARB published best available retrofit control technology determinations (BARCT) for spark-ignited stationary IC engines. The BARCT determinations set recommended NOx limits for the retrofit of stationary spark-ignited engines.

In addition, in 2004, CARB adopted the CI Engine ATCM that sets emissions limits for PM and other criteria pollutants for diesel fueled engines and requires the use of cleaner-burning fuels for all diesel engines. The CI Engine ATCM will significantly affect stationary diesel engines in California. It will result in either the retrofit or the replacement of virtually all existing prime engines and the reduction of hours of operation for emergency standby engines by 2011. Several air districts in the State have also adopted regulations that reflect emission limits for NOx contained in the CARB BARCT determinations and the U.S. EPA Off-Road Tiered Standards, including NOx limits for liquid-fueled engines. Secondary PM in the form

of ammonium nitrate is formed from the photochemical reaction of NOx with ammonia. The physical changes involved with the type of emission control strategies that could be implemented focus on the installation of control equipment at existing stationary combustion sources to reduce NOx emissions such as low-NOx burners, selective catalytic reduction, and other burner and flue gas configurations that would be considered to improve the efficiency of the combustion process. Alternative fuels could also be used.

The installation and operation of add-on air pollution control equipment can potentially create secondary or indirect air quality impacts (e.g., emissions), which can adversely affect local and regional air quality. A project generates emissions both during the period of its construction and through ongoing daily operations. During installation of add-on air pollution control devices, emissions may be generated by onsite construction equipment and by offsite vehicles used for worker commuting.

**Construction Impacts:** Compliance with the proposed rule amendments could entail changing engine operation parameters such as changing the air-fuel ratio, the use of alternative fuels or the addition of electronic controllers; require modification of engines or engine parts such as cylinder heads, addition of pre-combustion chambers, turbochargers or fuel injectors; or addition of post-combustion controls, including non-selective catalytic reduction (NSCR), selective catalytic reduction (SCR). Only minor construction would be involved to change electronic controllers or change other aspects of the engine parameters to comply. Modifications to engines or the replacement of engines if new IC engines are purchased to replace existing IC engines would result in minor construction activities. These activities would not require a significant amount of workers or construction-related equipment.

Retrofitting IC engines with post-combustion NOx controls may involve more substantial construction activities and operational maintenance requirements depending on the control equipment being installed (e.g., SCR). Additional storage tanks to store ammonia may also be required if new SCR units are installed. Construction activities associated with the installation of add-on controls may require minor grading, installation of foundations, and installation of equipment, requiring additional construction workers and construction equipment (e.g., graders, pavers, cranes, etc.). Construction activities and the related air emissions are temporary and will cease following completion of construction activities. Therefore, construction emissions are not expected to be significant.

**Operation Impacts:** After construction activities are completed, emissions may be generated by the operation of the add-on air pollution control devices and offsite vehicles used for delivering fresh materials needed for operations (fresh catalyst and aqueous ammonia) and hauling away spent catalyst. These impacts are expected to be limited to one to two truck trips per month for facilities that use ammonia, for example, and therefore result in less than significant air quality impacts.

Based on the air quality analysis, proposed Rule 9-8 is expected to result in reductions in PM and NOx emissions and, thus, provide air quality benefits. As shown in Tables 2-2 and 2-3, implementation of Rule 9-8 is expected to result in a reduction in NOx emissions of about 9.6 tons per day and a reduction in PM emissions of about 1.2 tons per day. Based on the above, no significant adverse impacts to air quality are expected. In fact, the proposed project is expected to provide an air quality benefit by reducing emissions of NOx and PM.

Emission reductions from the control of emissions could result in secondary emissions. Options for further NOx emission reductions could include addition of control equipment, including SCR. Installation of new

SCR equipment or increasing the control efficiency of existing equipment would be expected to increase the amount of ammonia used for NOx control. As a result ammonia slip emissions could increase, thus, potentially contributing to PM concentrations. Ammonia can also be released in liquid form from storage tanks or during transport and transfer, thus, directly generating PM emissions. Ammonia can also be released in gaseous form where it is a precursor to PM emissions. Ammonia, although not considered to be a toxic air contaminant, is a hazardous compound and has been identified by the California Air Resources Board as a candidate toxic air contaminant pending further testing. Ammonia emissions from an SCR unit can be generated by ammonia slip. To ensure maximum NOx reduction efficiency, SCR operators typically injected excess ammonia, that is, a higher ammonia to NOx molar ratio, into the flue gas to ensure achieving the appropriate NOx reduction reaction. The excess ammonia that does not react with the NOx passes or "slips" through the reactor vessel and is released into the atmosphere. Ammonia slip can worsen as the catalyst ages and becomes less effective. Ammonia slip from SCR equipment is continuously monitored and controlled. A limit on ammonia slip is normally included in permits to operate for stationary sources, which should minimize potential air quality impacts associated with ammonia slip from these sources.

The proposed modifications to Rule 9-8 are expected to control emissions of PM and NOx from affected sources, without affecting the maximum capacity and/or permitted firing rates of those sources. Therefore, the proposed project is not expected to have an adverse affect on or increase emissions of greenhouse gases (e.g., carbon dioxide).

III e. Proposed modifications to Rule 9-8 will result in a reduction in PM and NOx emissions from some stationary IC engines. Facilities are expected to comply with the modified rule by installing control devices, modifying burners or using alternative fuels. The proposed project is not expected to create significant objectionable odors, either during construction or during operations. Specific to the installation of SCR equipment for various affected facilities, ammonia will be employed and it can have a strong odor. Nonetheless, the proposed project is not expected to generate substantial ammonia odors, since ammonia is usually stored in enclosed pressurized tanks.

Injection of ammonia into the flue gas often requires more ammonia than is necessary to achieve the desired NOx reduction. Under normal operating and permitted conditions, ammonia slip is approximately five to 10 ppm. Because exhaust gases are hot, any ammonia slip emissions would be quite buoyant and would rapidly rise to higher altitudes without any possibility of lingering at ground level. The odor threshold of ammonia is one to five ppm, but because of the buoyancy of ammonia emissions and prevailing winds, it is unlikely that ammonia slip emissions would exceed the odor threshold. The maximum ground level concentration would be less than one ppm at the point of maximum impact (annual one-hour maximum). Permits for installing SCR equipment will be subject to conditions that would specifically limit the amount of ammonia slip.

Affected facilities employing the SCR equipment may also consider maintaining regular surveillance efforts to minimize the frequency and magnitude of odor events. For the installation of control equipment other than SCR, the use of BARCT also reduces the emissions of compounds that could otherwise generate odors. Therefore, no significant odor impacts are expected from the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | 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 Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, 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) | Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☐ | ☑ |
| 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? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. A wide variety of biological resources are located within the Bay Area.

The facilities affected by the proposed rule amendments are located in the Bay Area-Delta Bioregion (as defined by the State's Natural Communities Conservation Program). This Bioregion is comprised of a variety of natural communities, which range from salt marshes to chaparral to oak woodland. The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area. The affected facilities have been graded to develop the various industrial and commercial structures and are typically, surrounded by other industrial and commercial facilities. Native vegetation, other than landscape vegetation, has generally been removed from operating portions of industrial and commercial facilities to minimize safety and fire hazards.

# Regulatory Background

Biological resources are generally protected by the City and/or County General Plans through land use and zoning requirements which minimize or prohibit development in biologically sensitive areas. Biological resources are also protected by the California Department of Fish and Game, and the U.S. Fish and Wildlife Service. The U.S Fish and Wildlife Service and National Marine Fisheries Service oversee the federal Endangered Species Act. Development permits may be required from one or both of these agencies if development would impact rare or endangered species. The California Department of Fish and Game administers the California Endangered Species Act which prohibits impacting endangered and threatened species. The U.S. Army Corps of Engineers and the U.S. EPA regulate the discharge of dredge or fill material into waters of the United States, including wetlands.

# Discussion of Impacts

IV a – f. No impacts on biological resources are anticipated from the proposed rule amendments which would apply to existing and new facilities with IC engines. The engines are located within the confines of industrial and commercial facilities. The net effect of implementing proposed amendments to Rule 9-8 will be improved air quality resulting from reduction of IC engine emissions which is expected to be beneficial for both plant and animal life. Installation of control devices is not expected to result in any physical changes outside of the confines of the affected facilities and is not expected to affect any biological resources in the area. Therefore, no adverse significant impacts to biological resources are expected due to the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | 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 Section 15064.5? | ☐ | ☐ | ☐ | ☑ |
| b) | Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | ☐ | ☐ | ☐ | ☑ |
| c) | Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☐ | ☑ |
| d) | Disturb any human remains, including those interred outside formal cemeteries? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural and open space uses. Cultural resources are defined as buildings, sites, structures, or objects which might have historical architectural, archaeological, cultural, or scientific importance.

The Carquinez Strait represents the entry point for the Sacramento and San Joaquin Rivers into the San Francisco Bay. This locality lies within the San Francisco Bay and the west end of the Central Valley archaeological regions, both of which contain a rich array of prehistoric and historical cultural resources. The areas surrounding the Carquinez Strait and Suisun Bay have been occupied for millennia given their abundant combination of littoral and oak woodland resources.

The facilities with IC engines affected by the proposed rule amendments generally are located in industrial and commercial areas throughout the Bay Area. The sites have been graded to develop the various industrial and commercial structures and are typically surrounded by other commercial and industrial facilities. Cultural resources are generally not located within the operating portions of industrial or commercial facilities.

# Regulatory Background

The State CEQA Guidelines define a significant cultural resource as a "resource listed or eligible for listing on the California Register of Historical Resources" (Public Resources Code Section 5024.1). A project would have a significant impact if it would cause a substantial adverse change in the significance of a historical resource (State CEQA Guidelines Section 15064.5(b)). A substantial adverse change in the significance of a historical resource would result from an action that would demolish or adversely alter the physical characteristics of the historical resource that convey its historical significance and that qualify the resource for inclusion in the California Register of Historical Resources or a local register or survey that meets the requirements of Public Resources Code Sections 50020.1(k) and 5024.1(g).

# Discussion of Impacts

V a – d. No impacts on cultural resources are anticipated from the proposed rule amendments that would apply to existing facilities with stationary IC engines. The engines already exist and are located within the confines of existing facilities. Facilities are expected to comply by replacing or retrofitting engines with RACT / BARCT technologies or using alternative fuels. Construction activities would involve replacing, making minor changes to, or installing pollution control equipment on existing stationary IC engines. Completion of the proposed project is not expected to result in any significant physical changes to the facilities that would require the acquisition of additional land and potentially impact cultural resources. Therefore, no adverse significant impacts to cultural resources are expected due to the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **VI.** | **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? Refer to California Geologic Survey Special Publication 42. | ☐ | ☐ | ☐ | ☑ |
| | • Strong seismic ground shaking? | ☐ | ☐ | ☐ | ☑ |
| | • Seismic–related ground failure, including liquefaction? | ☐ | ☐ | ☐ | ☑ |
| | • Landslides? | ☐ | ☐ | ☐ | ☑ |
| 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 onsite or offsite 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 in areas where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential,

agricultural, and open space uses. The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area.

The affected facilities with stationary IC engines are located in the natural region of California known as the Coast Ranges geomorphic province. The province is characterized by a series of northwest trending ridges and valleys controlled by tectonic folding and faulting, examples of which include the Suisun Bay, East Bay Hills, Briones Hills, Vaca Mountains, Napa Valley, and Diablo Ranges.

Regional basement rocks consist of the highly deformed Great Valley Sequence, which include massive beds of sandstone inter-fingered with siltstone and shale. Unconsolidated alluvial deposits, artificial fill, and estuarine deposits, (including Bay Mud) underlie the low-lying region along the margins of the Carquinez Straight and Suisun Bay. The estuarine sediments found along the shorelines of Solano County are soft, water-saturated mud, peat and loose sands. The organic, soft, clay-rich sediments along the San Francisco and San Pablo Bays are referred to locally as Bay Mud and can present a variety of engineering challenges due to inherent low strength, compressibility and saturated conditions. Landslides in the region occur in weak, easily weathered bedrock on relatively steep slopes.

The San Francisco Bay Area is a seismically active region, which is situated on a plate boundary marked by the San Andreas Fault System. Several northwest trending active and potentially active faults are included with this fault system. Under the Alquist-Priolo Earthquake Fault Zoning Act, Earthquake Fault Zones were established by the California Geologic Survey along "active" faults, or faults along which surface rupture occurred in Holocene time (the last 11,000 years). In the Bay area, these faults include the San Andreas, Hayward, Rodgers Creek-Healdsburg, Concord-Green Valley, Greenville-Marsh Creek, Seal Cove/San Gregorio and West Napa faults. Other smaller faults in the region classified as potentially active include the Southampton and Franklin faults.

Ground movement intensity during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geological material. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill. Earthquake ground shaking may have secondary effects on certain foundation materials, including liquefaction, seismically induced settlement, and lateral spreading.

# Regulatory Background

Construction is regulated by the local City or County building codes that provide requirements for construction, grading, excavations, use of fill, and foundation work including type of materials, design, procedures, etc. which are intended to limit the probability of occurrence and the severity of consequences from geological hazards. Necessary permits, plan checks, and inspections are generally required.

The City or County General Plan includes the Seismic Safety Element. The Element serves primarily to identify seismic hazards and their location in order that they may be taken into account in the planning of future development. The Uniform Building Code is the principle mechanism for protection against and relief from the danger of earthquakes and related events.

In addition, the Seismic Hazard Zone Mapping Act (Public Resources Code §§2690 – 2699.6) was passed by the California legislature in 1990 following the Loma Prieta earthquake. The Act required that the California

Geologic Survey (CGS) develop maps that identify the areas of the state that require site specific investigation for earthquake-triggered landslides and/or potential liquefaction prior to permitting most urban developments. The act directs cities, counties and state agencies to use the maps in their land use planning and permitting processes.

Local governments are responsible for implementing the requirements of the Seismic Hazards Mapping Act. The maps and guidelines are tools for local governments to use in establishing their land use management policies and in developing ordinances and review procedures that will reduce losses from ground failure during future earthquakes.

# Discussion of Impacts

VI a. No significant adverse impacts on geology and soils are anticipated from the proposed rule amendments that would apply to existing operations at affected facilities. Facilities are expected to comply by replacing or retrofitting engines with RACT / BARCT technologies. Construction activities would involve replacing, making minor changes to, or adding on pollution control technology to existing stationary IC engines. New control equipment may require building permits from the local jurisdiction and compliance with the Uniform Building Codes. 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 bases seismic design on minimum lateral seismic forces ("ground shaking"). The Uniform Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulae 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 issuance of building permits from the local agency may be required for new equipment to assure compliance with the Uniform Building Code requirements which include requirements for building within seismic hazard zones. No significant impacts from seismic hazards are expected since the equipment associated with the proposed project will be required to comply with the Uniform Building Codes, thus reducing the risk of loss, injury, or death due to rupture of a known earthquake fault, strong seismic ground shaking or seismic–related ground failure, including liquefaction landslides. Therefore, no adverse significant impacts related to seismic activity are expected due to the proposed rule amendments.

VI b – e. No impacts on geology and soils are anticipated from the proposed rule amendments that would apply to existing operations at affected facilities. Facilities are expected to comply by replacing or retrofitting engines with RACT / BARCT technologies. Construction activities would involve replacing, making minor changes to, or installing air pollution control equipment on existing stationary IC engines. Therefore, construction activities associated with the proposed rule amendments are not expected to result in substantial soil erosion or the loss of topsoil. The facilities already exist and no construction activities outside the confines of the existing facilities are expected. Likewise, no new structure is expected to be constructed on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property. Construction would not affect soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for

the disposal of wastewater. Therefore, no adverse significant impacts to geology and soils are expected due to the proposed rule.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **VII.** | **HAZARDS AND HAZARDOUS MATERIALS.** Would the project: | | | | |
| a) | Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☑ | ☐ |
| b) | Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ☑ | ☐ |
| c) | Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☑ | ☐ |
| d) | Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☑ | ☐ |
| e) | Be located within an airport land use plan or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☑ |
| f) | Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☑ |
| g) | Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☑ |
| h) | Expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands? | ☐ | ☐ | ☑ | ☐ |

# Setting

Many of the affected facilities handle and process large quantities of flammable, hazardous, and acutely hazardous materials. Accidents involving these substances can result in worker or public exposure to fire, heat, blast from an explosion, or airborne exposure to hazardous substances.

The potential hazards associated with industrial activities are a function of the materials being processed, processing systems, and procedures used to operate and maintain the facility. The hazards that are likely to exist are identified by the physical and chemical properties of the materials being handled and their process conditions, including the following events.

- **Toxic gas clouds:** Toxic gas clouds are releases of volatile chemicals (e.g., , chlorine and hydrogen sulfide) that could form a cloud and migrate off-site, thus exposing individuals. "Worst-case" conditions tend to arise when very low wind speeds coincide with an accidental release, which can allow the chemicals to accumulate rather than disperse.

- **Torch fires (gas and liquefied gas releases), flash fires (liquefied gas releases), pool fires, and vapor cloud explosions (gas and liquefied gas releases):** The rupture of a storage tank containing a flammable gaseous material (like propane), without immediate ignition, can result in a vapor cloud explosion. The "worst-case" upset would be a release that produces a large aerosol cloud with flammable properties. If the flammable cloud does not ignite after dispersion, the cloud would simply dissipate. If the flammable cloud were to ignite during the release, a flash fire or vapor cloud explosion could occur. If the flammable cloud were to ignite immediately upon release, a torch fire would ensue.

- **Thermal Radiation:** Thermal radiation is the heat generated by a fire and the potential impacts associated with exposure. Exposure to thermal radiation would result in burns, the severity of which would depend on the intensity of the fire, the duration of exposure, and the distance of an individual to the fire.

- **Explosion/Overpressure:** Process vessels containing flammable explosive vapors and potential ignition sources are present at many types of industrial facilities. Explosions may occur if the flammable/explosive vapors came into contact with an ignition source. An explosion could cause impacts to individuals and structures in the area due to overpressure.

For all affected facilities, risks to the public are reduced if there is a buffer zone between industrial processes and residences or other sensitive land uses, or the prevailing wind blows away from residential areas and other sensitive land uses. The risks posed by operations at each facility are unique and determined by a variety of factors. The facilities affected by the proposed amendments tend to be located in industrial areas which help minimize public exposure in the event of a release.

# Regulatory Background

There are many federal and state rules and regulations that affected facilities must comply with which serve to minimize the potential impacts associated with hazards at these facilities.

Under the Occupational Safety and Health Administration (OSHA) regulations [29 Code of Federal Regulations (CFR) Part 1910], facilities which use, store, manufacture, handle, process, or move highly hazardous materials must prepare a fire prevention plan. In addition, 29 CFR Part 1910.119, Process Safety Management (PSM) of Highly Hazardous Chemicals, and Title 8 of the California Code of Regulations, General Industry Safety Order §5189, specify required prevention program elements to protect workers at facilities that handle toxic, flammable, reactive, or explosive materials. Prevention program elements are aimed at preventing or minimizing the consequences of catastrophic releases of the chemicals and include process hazard analyses, formal training programs for employees and contractors, investigation of equipment mechanical integrity, and an emergency response plan.

Section 112 (r) of the Clean Air Act Amendments of 1990 [42 U.S.C. 7401 et. Seq.] and Article 2, Chapter 6.95 of the California Health and Safety Code require facilities that handle listed regulated substances to develop Risk Management Programs (RMPs) to prevent accidental releases of these substances, U.S. EPA regulations are set forth in 40 CFR Part 68. In California, the California Accidental Release Prevention (CalARP) Program regulation (CCR Title 19, Division 2, Chapter 4.5) was issued by the Governor's Office of Emergency Services (OES). RMPs consist of three main elements: a hazard assessment that includes off-site consequences analyses and a five-year accident history, a prevention program, and an emergency response program. Refineries are also required to comply with the U.S. EPA's Emergency Planning and Community Right-to-Know Act (EPCRA).

Affected facilities that store materials are required to have a Spill Prevention Control and Countermeasures (SPCC) Plan per the requirements of 40 Code of Federal Regulations, Section 112. The SPCC is designed to prevent spills from on-site facilities and includes requirements for secondary containment, provides emergency response procedures, establishes training requirements, and so forth.

The Hazardous Materials Transportation (HMT) Act is the federal legislation that regulates transportation of hazardous materials. The primary regulatory authorities are the U.S. Department of Transportation, the Federal Highway Administration, and the Federal Railroad Administration. The HMT Act requires that carriers report accidental releases of hazardous materials to the Department of Transportation at the earliest practical moment (49 CFR Subchapter C). The California Department of Transportation (Caltrans) sets standards for trucks in California. The regulations are enforced by the California Highway Patrol.

California Assembly Bill 2185 requires local agencies to regulate the storage and handling of hazardous materials and requires development of a plan to mitigate the release of hazardous materials. Businesses that handle any of the specified hazardous materials must submit to government agencies (i.e., fire departments), an inventory of the hazardous materials, an emergency response plan, and an employee training program. The business plans must provide a description of the types of hazardous materials/waste on-site and the location of these materials. The information in the business plan can then be used in the event of an emergency to determine the appropriate response action, the need for public notification, and the need for evacuation.

Contra Costa County has adopted an industrial safety ordinance that addresses the human factors that lead to accidents. The ordinance requires stationary sources to develop a written human factors program that includes the following:

- Consideration of human factors in the process hazards analysis process;

- Consideration of human systems as causal factors in the incident investigation process for major accidents or releases or for incidents that could have led to a major accident or release;
- Training of employees in the human factors program;
- Operating procedures;
- Management of changes in staffing, staffing levels, or organization in operations or emergency response;
- Participation of employees and their representatives in the development of the written human factors program;
- Development of a program that includes issues such as staffing, shift work, and overtime; and
- Incorporation of the human factors program description in the facility safety plan.

# Discussion of Impacts

VII a - c. The proposed rule amendments are expected to reduce emissions from existing stationary IC engines at affected facilities thus reducing PM and NOx emissions. Up to 175 facilities could choose to comply by installing SCR technology to reduce NOx emissions. SCRs use ammonia or urea to react with NOx, in the presence of a catalyst, to form nitrogen gas and water. In some SCR installations, anhydrous ammonia is used. Safety hazards related to the transport, storage and handling of ammonia exist. Ammonia is considered to be a hazardous chemical. Ammonia has acute and chronic non-cancer health effects and also contributes to ambient PM10 emissions under some circumstances. Facilities can use either aqueous ammonia or anhydrous ammonia.

**On-Site Release Scenario:** The use of anhydrous ammonia involves greater risk than aqueous ammonia because it is stored and transported under pressure. In the event of a leak or rupture of a tank, anhydrous ammonia is released and vaporizes into the gaseous form, which is its normal state at atmospheric pressure and produces a toxic cloud. Aqueous ammonia is a liquid at ambient temperatures and gas is only produced when a liquid pool from a spill evaporates. Under current OES regulations implementing the CalARP requirements, aqueous ammonia is regulated under California Health and Safety Code Section 2770.1.

The proposed amendments may require the increased use and storage of ammonia, primarily in industrial/commercial zones. The use and storage of anhydrous ammonia would be expected to result in significant hazard impacts as there is the potential for anhydrous ammonia to migrate off-site and expose individuals to concentrations of ammonia that could lead to adverse health impacts. Anhydrous ammonia would be expected to form a vapor cloud (since anhydrous ammonia is a gas at standard temperature and pressures) and migrate from the point of release. The number of people exposed and the distance that the cloud would travel would depend on the meteorological conditions present. Depending on the location of the spill, a number of individuals could be exposed to high concentrations of ammonia resulting in potentially significant impacts.

In the event of an aqueous ammonia release, the ammonia solution would have to pool and spread out over a flat surface in order to create sufficient evaporation to produce a significant vapor cloud. For a release from on-site vessels or storage tanks, spills would be released into a containment area, which would limit the surface area of the spill and the subsequent toxic emissions. The containment area would limit the potential pool size, minimizing the amount of spilled material that would evaporate, form a vapor cloud, and impact residences or other sensitive receptors (including schools) in the area of the spill. Significant hazard impacts associated with a release of aqueous ammonia would not be expected.

**Transportation Release Scenario:** Use and transport of anhydrous ammonia involves greater risk than aqueous ammonia because it is stored and transported under pressure. In the event of a leak or rupture of a tank, anhydrous ammonia is released and vaporizes into the gaseous form, which is its normal state at atmospheric temperature and pressure, and produces a toxic cloud. Aqueous ammonia is a liquid at ambient temperatures and pressure, and gas is only produced when a liquid pool from a spill evaporates. Deliveries of ammonia would be made to each facility by tanker truck via public roads. The maximum capacity of a tanker truck is 150 barrels. Regulations for the transport of hazardous materials by public highway are described in 49 CFR 173 and 177. Nineteen percent aqueous ammonia is considered a hazardous material under 49 CFR 172.

Although trucking of ammonia and other hazardous materials is regulated for safety by the U.S. DOT, there is a possibility that a tanker truck could be involved in an accident spilling its contents. The factors that enter into accident statistics include distance traveled and type of vehicle or transportation system. Factors affecting automobiles and truck transportation accidents include the type of roadway, presence of road hazards, vehicle type, maintenance and physical condition, and driver training. A common reference frequently used in measuring risk of an accident is the number of accidents per million miles traveled. Complicating the assessment of risk is the fact that some accidents can cause significant damage without injury or fatality.

The actual occurrence of an accidental release of a hazardous material cannot be predicted. The location of an accident or whether sensitive populations would be present in the immediate vicinity also cannot be identified. In general, the shortest and most direct route that takes the least amount of time would have the least risk of an accident. Hazardous material transporters do not routinely avoid populated areas along their routes, although they generally use approved truck routes that take population densities and sensitive populations into account.

The hazards associated with the transport of regulated (CCR Title 19, Division 2, Chapter 4.5 or the CalARP requirements) hazardous materials, including ammonia, would include the potential exposure of numerous individuals in the event of an accident that would lead to a spill. Factors such as amount transported, wind speed, ambient temperatures, route traveled, distance to sensitive receptors are considered when determining the consequence of a hazardous material spill.

In the unlikely event that the tanker truck would rupture and release the entire 150 barrels of aqueous ammonia, the ammonia solution would have to pool and spread out over a flat surface in order to create sufficient evaporation to produce a significant vapor cloud. For a road accident, the roads are usually graded and channeled to prevent water accumulation and a spill would be channeled to a low spot or drainage system, which would limit the surface area of the spill and the subsequent toxic emissions. Additionally, the roadside surfaces may not be paved and may absorb some of the spill. Without this pooling effect on an impervious surface, the spilled ammonia would not evaporate into a toxic cloud and impact residences or

other sensitive receptors in the area of the spill. An accidental aqueous ammonia spill occurring during transport is, therefore, not expected to have significant impacts.

In the unlikely event that a tanker truck would rupture and release the entire contents of anhydrous ammonia, the ammonia would be expected to form a vapor cloud (since anhydrous ammonia is a gas at standard temperature and pressures) and migrate from the point of release. There are federal, State and local agencies with jurisdiction over hazardous materials and waste are responsible for ensuring that hazardous materials and waste handling activities are conducted in accordance with applicable laws and regulations. While compliance with these laws and regulations will minimize the chance of an accidental release of anhydrous ammonia, the potential will still exist that an unplanned release could occur. The number of people exposed and the distance that the cloud would travel would depend on the meteorological conditions present. Depending on the location of the spill, a number of individuals could be exposed to high concentrations of ammonia resulting in potentially significant impacts.

**Conclusion:** Based on the above evaluation and significance criteria, the hazard impacts associated with the use and transport of aqueous ammonia are less than significant. The hazard impacts associated with the use and transport of anhydrous ammonia are potentially significant, but can be mitigated by using aqueous ammonia. Therefore, the proposed amendments to Rule 9-8 are not expected to generate significant adverse hazard impacts because the increase in ammonia use within the Bay Area is relatively small and limited, and the numerous regulations that exist minimize the potential hazard impacts. Therefore, the impacts of the proposed project on hazards are expected to be less than significant.

VII d. No impacts on hazardous material sites are anticipated from the proposed rule amendments that would apply to existing operations. Some of the affected facilities may be located on the hazardous materials sites list pursuant to Government Code Section 65962.5. However, the proposed rule amendments would have no affect on contaminated sites nor would the amendments create a significant hazard to the public or environment. The stationary IC engines already exist and are located within the confines of existing industrial and commercial facilities. The proposed rule amendments neither require, nor are likely to result in, activities that would affect existing site contamination.

VII e – f. No impacts on airports or airport land use plans are anticipated from the proposed rule amendments, which would apply to operations at existing facilities. The stationary IC engines already exist and are located within the confines of existing facilities. Installation of emission control devices on stationary IC engines is not expected to result in any physical changes that would require additional land or impact airport land use plans. Therefore, no significant adverse impacts on hazards at airports are expected.

VII g. No impacts on emergency response plans are anticipated from the proposed rule amendments that would apply to existing facility operations. Installation of emission control devices on stationary IC engines is not expected to result in any changes to emergency response plans. Therefore, no significant adverse impacts on emergency response plans are expected.

VII h. The proposed project will not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees. Additional natural gas may be used during the construction phase of the proposed project. Natural gas is currently used at most of the affected facilities. The hazards associated with natural gas would result in a torch fire in the event that a release occurred and caught fire. Because of the locations of each facility that would be affected by the proposed project, a torch fire would be expected to remain on-site so

that there would be no public exposure to the fire hazards. No substantial or native vegetation typically exists on or near the affected facilities (specifically because they could be a fire hazard) so the proposed project is not expected to expose people or structures to wild fires. Therefore, no significant increase in fire hazards are expected any of the affected facilities associated with the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **VIII. HYDROLOGY AND WATER QUALITY.** | | | | | |
| | Would the project: | | | | |
| a) | Violate any water quality standards or waste discharge requirements? | ☐ | ☐ | ☐ | ☑ |
| 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 that 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, in a manner that would result in substantial erosion or siltation onsite or offsite? | ☐ | ☐ | ☐ | ☑ |
| d) | 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 flooding onsite or offsite? | ☐ | ☐ | ☐ | ☑ |
| e) | Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☐ | ☐ | ☑ |
| f) | Otherwise substantially degrade water quality? | ☐ | ☐ | ☐ | ☑ |
| g) | Place housing 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? | ☐ | ☐ | ☐ | ☑ |
| h) | Place within a 100-year flood hazard area structures that would impede or redirect flood flows? | ☐ | ☐ | ☐ | ☑ |
| i) | 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? | | | | |
| j) | Inundation by seiche, tsunami, or mudflow? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and affected environment vary substantially throughout the area and include commercial, industrial, residential, agricultural, and open space uses.

The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area. Affected facilities are generally surrounded by other industrial and commercial facilities. Reservoirs and drainage streams are located throughout the area and discharge into the Bays. Marshlands incised with numerous winding tidal channels containing brackish water are located throughout the Bay Area.

The affected facilities are located within the San Francisco Bay Area Hydrologic Basin. The primary regional groundwater water-bearing formations include the recent and Pleistocene (up to two million years old) alluvial deposits and the Pleistocene Huichica formation. Salinity within the unconfined alluvium appears to increase with depth to at least 300 feet. Water of the Huichica formation tends to be soft and relatively high in bicarbonate, although usable for domestic and irrigation needs.

# Regulatory Background

The Federal Clean Water Act of 1972 primarily establishes regulations for pollutant discharges into surface waters in order to protect and maintain the quality and integrity of the nation’s waters. This Act requires industries that discharge wastewater to municipal sewer systems to meet pretreatment standards. The regulations authorize the U.S. EPA to set the pretreatment standards. The regulations also allow the local treatment plants to set more stringent wastewater discharge requirements, if necessary, to meet local conditions.

The 1987 amendments to the Clean Water Act enabled the U.S. EPA to regulate, under the National Pollutant Discharge Elimination System (NPDES) program, discharges from industries and large municipal sewer systems. The U.S. EPA set initial permit application requirements in 1990. The State of California, through the State Water Resources Control Board, has authority to issue NPDES permits, which meet U.S. EPA requirements, to specified industries.

The Porter-Cologne Water Quality Act is California's primary water quality control law. It implements the state's responsibilities under the Federal Clean Water Act but also establishes state wastewater discharge requirements. The RWQCB administers the state requirements as specified under the Porter-Cologne Water Quality Act, which include storm water discharge permits. The water quality in the Bay Area is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board.

In response to the Federal Act, the State Water Resources Control Board prepared two state-wide plans in 1991 and 1995 that address storm water runoff: the California Inland Surface Waters Plan and the California Enclosed Bays and Estuaries Plan. Enclosed bays are indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. San Francisco Bay, and its constituent's parts, including Carquinez Strait and Suisun Bay, falls under this category.

The San Francisco Bay Basin Plan identifies the: (1) beneficial water uses that need to be protected; (2) the water quality objectives needed to protect the designated beneficial water uses; and (3) strategies and time schedules for achieving the water quality objectives. The beneficial uses of the Carquinez Strait that must be protected which include water contact and non-contact recreation, navigation, ocean commercial and sport fishing, wildlife habitat, estuarine habitat, fish spawning and migration, industrial process and service supply, and preservation of rare and endangered species. The Carquinez Strait and Suisun Bay are included on the 1998 California list as impaired water bodies due to the presence of chlordane, copper, DDT, diazinon, dieldrin, dioxin and furan compounds, mercury, nickel, PCBs, and selenium.

# Discussion of Impacts

VIII a - b. No significant adverse impacts on hydrology/water quality resources are anticipated from the proposed rule amendments, which would apply to existing industrial and commercial facilities. Owners/operators of facilities affected by the proposed rule amendments may install emission control devices to reduce PM and NOx emissions to comply. The facilities affected by the proposed rule amendments are required to treat and monitor wastewater discharges, as applicable, from their facilities. The potential add on air pollution control devices that may be used to comply with the proposed amendments to Rule 9-8 are not expected to require an increase in water use or generate additional wastewater discharge. Therefore, no violation of any water quality standards or waste discharge requirements is expected. The proposed amendments are not expected to deplete groundwater supplies or interfere with groundwater recharge. Therefore, no significant impacts on groundwater supplies are expected due to the proposed Rule 9-8 amendments.

VIII c - f. The facilities affected by the proposed rule amendments are required to treat and monitor wastewater discharges, as applicable, from their facilities. The decrease of NOx and PM emissions from stationary IC engines would have little impact on water use, and little to no impact on wastewater discharges or drainage patterns. Facilities are expected to comply by replacing engines, retrofitting engines, or using alternative fuels. Therefore, the proposed amendments are not expected to alter the existing drainage or drainage patterns of the site, result in erosion or siltation, alter the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite. Nor are the proposed amendments expected to create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. The proposed amendments are not expected to degrade water quality. Therefore, no significant adverse impacts on drainage patterns, or water runoff are expected.

VIII g – i. The proposed amendments may require modifications to existing facilities. The modifications are expected to be relatively minor so that additional land outside of the confines of existing facilities is not expected to be required. Existing industrial and commercial facilities are not usually located with 100-year flood hazard areas. Therefore, the proposed amendments are not expected to place any additional structures

within 100-year flood zones or other areas subject to flooding. Therefore, no significant adverse impacts due to flooding are expected.

VIII j. The proposed amendments may require modifications to existing facilities. The modifications are expected to be relatively minor (e.g., installation of pollution control equipment) so that additional land outside of the confines of existing facilities is not expected to be required. The proposed rule amendments are not expected to place any additional structures within areas subject to inundation by seiche, tsunami or mudflow. Therefore, no significant adverse impacts on hydrology/water due to seiche, tsunami or mudflow are expected.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **IX.** | **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 a general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☐ | ☑ |
| c) | Conflict with any applicable habitat conservation plan or natural community conservation plan? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area.

# Regulatory Background

Land uses are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

# Discussion of Impacts

IX a-c. Owners/operators of facilities affected by the proposed rule amendments would be required to replace, retrofit stationary IC engines, install pollution control devices, or use alternative fuels. The affected facilities are generally located in industrial and commercial areas. Installation of the additional equipment is not expected to result in any physical changes that would require construction outside of the confines of the existing facilities or alter existing land use.

There are no provisions in the proposed project 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 will be altered by the proposed project. Further, the proposed project is expected to be consistent with the typical industrial and commercial zoning of the affected facilities. Typically, all proposed modifications are expected to occur within the confines of the existing facilities. The proposed project would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Further, no new development or alterations to existing land designations will occur as a result of the implementation of the proposed project. Therefore, present or planned land uses in the region will not be affected as a result of the proposed project. Based upon the above considerations, significant land use planning impacts are not expected from the implementation of the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **X.** | **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? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area.

# Regulatory Background

Mineral resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

# Discussion of Impacts

X a-b. Owners/operators of facilities affected by the proposed rule amendments would be required to replace, retrofit stationary IC engines, install pollution control devices, or use alternative fuels. Installation of additional equipment is not expected to result in any action that 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, or of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Therefore, no significant impacts on mineral resources are expected.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XI.** | **NOISE.** Would the project: | | | | |
| a) | Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☐ | ☐ | ☑ |
| b) | Expose persons to or generate of excessive ground borne vibration or ground borne noise levels? | ☐ | ☐ | ☐ | ☑ |
| c) | Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☐ | ☑ |
| d) | Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☑ | ☐ |
| e) | Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☑ |
| f) | Be located within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area. Most affected facilities are surrounded by other industrial and commercial facilities.

# Regulatory Background

Noise issues related to construction and operation activities are addressed in local General Plan policies and local noise ordinance standards. The General Plan and noise ordinances generally establish allowable noise limits within different land uses including residential areas, other sensitive use areas (e.g., schools, churches, hospitals, and libraries), commercial areas, and industrial areas.

# Discussion of Impacts

XI a-c. Owners/operators of facilities affected by the proposed rule amendments would be required to replace, retrofit stationary IC engines, install pollution control devices, or use alternative fuels. Existing facilities affected by the proposed rule amendments are typically located in industrial and commercial settings, and noise is dominated by existing equipment. Internal combustion engines generate noise, are typically fitted with mufflers to reduce noise, and are often located in isolated structures to further reduce noise. Engine modification or the addition of control equipment such as SCR or NSCR is not expected to add to the existing noise level of an engine. Each facility affected will comply with all existing noise control laws or ordinances. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA (Cal/OSHA) have established noise standards to protect worker health. There is not expected to be any additional noise increase on a permanent basis from the project.

XI d. Modifications or changes associated with the implementation of the proposed project will take place at existing facilities that are located in industrial and commercial settings. The existing noise environment at each of the affected facilities is typically dominated by noise from existing equipment onsite, vehicular traffic around the facilities, and trucks entering and exiting facility premises. Construction activities for the proposed project may generate some noise associated with the use of construction equipment and construction-related traffic in the event that grading for the installation of new ammonia tanks, for example, is necessary. However, upon completion of any construction, noise from the proposed project is not expected to produce noise in excess of current operations at each of the existing facilities. These temporary potential noise increases are expected to be small and less than significant.

XI. e-f. Though some of the facilities affected by the proposed project are located at sites within an airport land use plan, or within two miles of a public airport, the addition of new or modification of existing equipment would not expose people residing or working in the project area to the same degree of excessive noise levels associated with airplanes. All noise producing equipment must comply with local noise ordinances and applicable OSHA or Cal/OSHA workplace noise reduction requirements. Based upon the above considerations, significant noise impacts are not expected from the implementation of the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XII.** | **POPULATION AND HOUSING.** Would the project: | | | | |
| a) | Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)? | ☐ | ☐ | ☐ | ☑ |
| b) | Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☑ |
| c) | Displace a substantial number of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area.

# Regulatory Background

Population and housing growth and resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

# Discussion of Impacts

XII. a. Minor construction activities associated with the proposed project 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. The reason for this conclusion is that operators of affected facilities who need to perform any construction activities to comply with the proposed project can draw from the existing labor pool in the local Bay Area. Further, it is not expected that replacing existing equipment with new equipment or installing air pollution control equipment will require new employees during operation of the equipment. In the event that new employees are hired, it is expected that the number of new employees at any one facility would be small. Human population within the jurisdiction of the BAAQMD is anticipated to grow regardless of implementing the proposed project. As a result, the proposed project is not anticipated to

generate any significant adverse effects, either direct or indirect, on population growth in the district or population distribution.

XII. b – c. Because the proposed project includes modifications and/or changes at existing facilities located in industrial and commercial settings, the proposed project is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people or housing elsewhere in the Bay Area. Based upon these considerations, significant population and housing impacts are not expected from the implementation of the proposed project.

| | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XIII. PUBLIC SERVICES.** Would the project: | | | | |
| a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental 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: | | | | |
| Fire protection? | ☐ | ☐ | ☑ | ☐ |
| Police protection? | ☐ | ☐ | ☐ | ☑ |
| Schools? | ☐ | ☐ | ☐ | ☑ |
| Parks? | ☐ | ☐ | ☐ | ☑ |
| Other public facilities? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area.

Given the large area covered by the BAAQMD, public services are provided by a wide variety of local agencies. Fire protection and police protection/law enforcement services within the BAAQMD are provided by various districts, organizations, and agencies. There are several school districts, private schools, and park departments within the BAAQMD. Public facilities within the BAAQMD are managed by different county, city, and special-use districts.

# Regulatory Background

City and/or County General Plans usually contain goals and policies to assure adequate public services are maintained within the local jurisdiction.

# Discussion of Impacts

XIII a. Implementation of the proposed project by installing new or modifying existing add-on controls is anticipated to continue current operations at existing affected facilities. The proposed project may result in greater demand for ammonia, which will need to be transported to the affected facilities that install SCR and stored onsite prior to use. In the event of an accidental release fire departments are typically first responders for control and clean-up and police may be need to be available to maintain perimeter boundaries. The proposed project is not expected to significantly affect fire or police departments because of the low probability of accidents during transport. Therefore, the proposed project is not expected to increase the need or demand for additional public services (e.g., fire departments, police departments, schools, parks, government, et cetera) above current levels.

As noted in the "Population and Housing" discussion above, the proposed project 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 any construction activities that may be necessary at affected facilities and operation of new or modified equipment is not expected to require additional employees. Therefore, there will be no increase in local population and thus no impacts are expected to local schools or parks.

Based upon these considerations, significant public services impacts are not expected from the implementation of the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XIV. RECREATION.** Would the project: | | | | | |
| a) | 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) | Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that there are numerous areas for recreational activities. The facilities affected by the proposed rule amendments are located in industrial and commercial areas throughout the Bay Area. Public recreational land uses are generally not located within the confines of industrial or commercial facilities.

# Regulatory Background

Recreational areas are generally protected and regulated by the City and/or County General Plans at the local level through land use and zoning requirements. Some parks and recreation areas are designated and protected by state and federal regulations.

# Discussion of Impacts

XIV a-b. As discussed under "Land Use" above, there are no provisions of the proposed project that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments; no land use or planning requirements will be altered by the proposed project. Further, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities or include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment because the proposed project is not expected to induce population growth. Based upon these considerations, no impacts on recreation are expected from the implementation of the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XV. TRANSPORTATION/TRAFFIC.** Would the project: | | | | | |
| a) | Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)? | ☐ | ☐ | ☐ | ☑ |
| b) | Cause, either individually or cumulatively, exceedance of a level-of-service standard 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 because of a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)? | ☐ | ☐ | ☐ | ☑ |
| e) | Result in inadequate emergency access? | ☐ | ☐ | ☐ | ☑ |
| f) | Result in inadequate parking capacity? | ☐ | ☐ | ☐ | ☑ |
| g) | Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles). Transportation systems located within the Bay Area include railroads, airports, waterways, and highways. The Port of Oakland and three international airports in the area serve as hubs for commerce and transportation. The transportation infrastructure for vehicles and trucks in the Bay Area ranges from single lane roadways to multilane interstate highways. The Bay Area contains over 19,600 miles of local streets and roads, and over 1,400 miles of state highways. In addition, there are over 9,040

transit route miles of services including rapid rail, light rail, commuter, diesel and electric buses, cable cars, and ferries. The Bay Area also has an extensive local system of bicycle routes and pedestrian paths and sidewalks. At a regional level, the share of workers driving alone was about 68 percent in 2000. The portion of commuters that carpool was about 12.9 percent in 2000. About 3.2 percent of commuters walked to work in 2000. In addition, other modes of travel (bicycle, motorcycle, etc.), account for 2.2 percent of commuters in 2000 (MTC, 2004).

Cars, buses, and commercial vehicles travel about 143 million miles a day (2000) on the Bay Area Freeways and local roads. Transit serves about 1.7 million riders on the average weekday (MTC, 2004).

The region is served by numerous interstate and U.S. freeways. On the west side of San Francisco Bay, Interstate 280 and U.S. 101 run north-south. U.S. 101 continues north of San Francisco into Marin County. Interstates 880 and 660 run north-south on the east side of the Bay. Interstate 80 starts in San Francisco, crosses the Bay Bridge, and runs northeast toward Sacramento. Interstate 80 is a six-lane north-south freeway which connects Contra Costa County to Solano County via the Carquinez Bridge. State Routes 29 and 84, both highways that allow at-grade crossings in certain parts of the region, become freeways that run east-west and across the Bay. Interstate 580 starts in San Rafael, crosses the Richmond-San Rafael Bridge, joins with Interstate 80, runs through Oakland, and then runs eastward toward Livermore. From the Benicia-Martinez Bridge, Interstate 680 extends north to Interstate 80 in Cordelia. Caltrans constructed a second freeway bridge adjacent and east of the existing Benicia-Martinez Bridge. The new bridge consists of five northbound traffic lanes. The existing bridge was re-striped to accommodate four lanes for southbound traffic. Interstate 780 is a four lane, east-west freeway extending from the Benicia-Martinez Bridge west to I-80 in Vallejo.

# Regulatory Background

Transportation planning is usually conducted at the county level. Each Bay Area County has a Congestion Management Agency. The Congestion Management Agency is responsible for transportation planning and administration of improvement projects in each county and in some cases, shares these responsibilities with the county departments. County development agencies conduct and oversee the transportation and planning for new development projects while the Congestion Management Agency implements the transportation programs and projects.

# Discussion of Impacts

XV a-b. Construction activities resulting from implementing the proposed project may generate a slight, although temporary, increase in traffic in the areas of each affected facility associated with construction workers, construction equipment, and the delivery of construction materials. However, the proposed project is not expected to cause a significant increase in traffic relative to the existing traffic load and capacity of the street systems surrounding the affected facilities. Also, the proposed project is not expected to exceed, either individually or cumulatively, the current level of service of the areas surrounding the affected facilities. The work force at each affected facility is not expected to significantly increase as a result of the proposed project and operation-related traffic is expected to be minimal. Thus, the traffic impacts associated with the proposed rule amendments are expected to be less than significant.

XV c. Though some of the facilities that will affected by the proposed project may be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, actions that would be taken to comply with the proposed project, such as installing new air pollution control equipment, are not expected to significantly influence or affect air traffic patterns. Further, the size and type of air pollution control devices that would be installed would not be expected to affect navigable air space. Thus, the proposed project would not result in a change in air traffic patterns including an increase in traffic levels or a change in location that results in substantial safety risks.

XV d - e. The siting of each affected facility is expected to be consistent with surrounding land uses and traffic/circulation in the surrounding areas of the affected facilities. Thus, the proposed project is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the affected facilities. Aside from the temporary effects due to a slight increase in truck traffic for those facilities that will undergo construction activities during installation or modification of air pollution control equipment, the proposed project is not expected to alter the existing long-term circulation patterns. The proposed project is not expected to require a modification to circulation, thus, no long-term impacts on the traffic circulation system are expected to occur. The proposed project does not involve construction of any roadways, so there would be no increase in roadway design feature that could increase traffic hazards. Emergency access at each affected facility is not expected to be impacted by the proposed project. Further, each affected facility is expected to continue to maintain their existing emergency access gates.

XV f. Each affected facility will be required to provide parking for the construction workers, as applicable, either on or within close proximity to each facility. No additional parking will be needed after completion of the construction phase because the work force at each facility is not expected to significantly increase as a result of the proposed project. Therefore, the proposed rule amendments will not result in significant adverse impacts on parking.

XV g. Construction and operation activities resulting from the proposed project are not expected to conflict with policies supporting alternative transportation since the proposed project does not involve or affect alternative transportation modes (e.g. bicycles or buses) because the construction and operation activities related to the proposed project will occur solely in existing industrial, commercial, and institutional areas.

Based upon these considerations, significant transportation/traffic impacts are not expected from the implementation of the proposed project.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XVI. UTILITIES AND SERVICE SYSTEMS.** Would the project: | | | | | |
| a) | Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☐ | ☑ |
| b) | Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☑ |
| c) | Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☑ |
| d) | Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements needed? | ☐ | ☐ | ☐ | ☑ |
| e) | 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? | ☐ | ☐ | ☐ | ☑ |
| f) | Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | ☐ | ☐ | ☐ | ☑ |
| g) | Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ☐ | ☑ |

# Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area.

Given the large area covered by the BAAQMD, public utilities are provided by a wide variety of local agencies. The affected facilities have wastewater and storm water treatment facilities and discharge treated wastewater under the requirements of NPDES permits.

Water is supplied to affected facilities by several water purveyors in the Bay Area. Solid waste is handled through a variety of municipalities, through recycling activities and at disposal sites.

There are no hazardous waste disposal sites within the jurisdiction of the BAAQMD. Hazardous waste generated at area facilities, which is not reused on-site, or recycled off-site, is disposed of at a licensed in-state hazardous waste disposal facility. Two such facilities are the Chemical Waste Management Inc. (CWMI) Kettleman Hills facility in King's County, and the Safety-Kleen facility in Buttonwillow (Kern County). Hazardous waste can also be transported to permitted facilities outside of California. The nearest out-of-state landfills are U.S. Ecology, Inc., located in Beatty, Nevada; USPCI, Inc., in Murray, Utah; and Envirosafe Services of Idaho, Inc., in Mountain Home, Idaho. Incineration is provided at the following out-of-state facilities: Aptus, located in Aragonite, Utah and Coffeyville, Kansas; Rollins Environmental Services, Inc., located in Deer Park, Texas and Baton Rouge, Louisiana; Chemical Waste Management, Inc., in Port Arthur, Texas; and Waste Research & Reclamation Co., Eau Claire, Wisconsin.

# Regulatory Background

City and/or County General Plans usually contain goals and policies to assure adequate utilities and service systems are maintain within the local jurisdiction.

# Discussion of Impacts

XVI a, b, d, e. The stationary IC engines affected by the proposed rule amendments already exist and are located within the confines of existing facilities within industrial and commercial areas. As discussed under Hydrology and Water Quality, owners/operators of facilities affected by the proposed rule amendments may install emission control devices to reduce PM and NOx emissions to comply. The facilities affected by the proposed rule amendments are required to treat and monitor wastewater discharges, as applicable, from their facilities. The potential add on air pollution control devices that may be used to comply with the proposed amendments to Rule 9-8 are not expected to require an increase in water use or wastewater discharge. Therefore, no significant adverse impacts on wastewater or water demand are expected.

XVI c. The facilities affected by the proposed rule amendments are by replacing engines, retrofitting engines, or using alternative fuels. Construction activities would involve replacing existing stationary IC engines or installing air pollution control equipment within the confines of existing facilities. Therefore, the proposed amendments are not expected to alter the existing drainage or require the construction of new storm water drainage facilities. Nor are the proposed amendments expected to create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. Therefore, no significant adverse impacts on storm drainage facilities are expected.

XVI f and g. The proposed rule amendments would not affected the ability of facilities to comply with federal, state, and local statutes and regulations related to solid waste. No significant impacts on waste generation are expected from the proposed rule amendments.

| | | Potentially Significant Impact | Less Than Significant Impact With Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XVII.** | **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 of Impacts

XVII a. The proposed rule amendments do not 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, as discussed in the previous sections of the CEQA checklist. The proposed rule amendments are expected to result in emission reductions from facilities with stationary IC engines thus providing a beneficial air quality impact and improvement in air quality. No significant adverse impacts are expected.

XVII b. Proposed Rule 9-8 is expected to result in emission reductions of NOx and PM from affected facilities with stationary IC engines, thus providing a beneficial air quality impact and improvement in air quality. The proposed rule amendments are part of a long-term plan to bring the Bay Area into compliance with the state ambient air quality standards for ozone and reduce emissions of particulate matter. The proposed rule amendments do not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in conjunction with other regulatory control projects. The

proposed rule amendments are not expected to have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. No significant adverse impacts are expected.

XVII c. The proposed rule amendments are expected to result in emission reductions from affected facilities, thus providing a beneficial air quality impact and improvement in air quality. The proposed rule amendments are part of a long-term plan to bring the Bay Area into compliance with the state ambient air quality standards for ozone and reduce emissions of particulate matter, thus reducing the potential health impacts due to these pollutants. The proposed rule amendments are not expected to have significant adverse effects (either directly or indirectly) to human beings.

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**Chapter 4**

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