BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

BOARD OF DIRECTORS
REGULAR MEETING
August 1, 2018

A meeting of the Bay Area Air Quality Management District Board of Directors will be held at 9:30 a.m. in the 1st Floor Board Room at the Air District Headquarters, 375 Beale Street, San Francisco, California 94105.

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 9:30 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.

This meeting will be webcast. To see the webcast, please visit www.baaqmd.gov/bodagendas at the time of the meeting. Closed captioning may contain errors and omissions, and are not certified for their content or form.

Public Comment Procedures

Persons wishing to make public comment must fill out a Public Comment Card indicating their name and the number of the agenda item on which they wish to speak, or that they intend to address the Board on matters not on the Agenda for the meeting.

Public Comment on Non-Agenda Matters, Pursuant to Government Code Section 54954.3 Speakers wishing to address the Board on non-agenda matters will be heard at the end of the agenda, and each will be allowed up to three minutes to address the Board at that time.

Members of the Board may engage only in very brief dialogue regarding non-agenda matters, and may refer issues raised to District staff for handling. In addition, the Chairperson may refer issues raised to appropriate Board Committees to be placed on a future agenda for discussion.

Public Comment on Agenda Items The public may comment on each item on the agenda as the item is taken up. Public Comment Cards for items on the agenda must be submitted in person to the Clerk of the Boards at the location of the meeting and prior to the Board taking up the particular item. Where an item was moved from the Consent Calendar to an Action item, no speaker who has already spoken on that item will be entitled to speak to that item again.

Speakers may speak for up to three minutes on each item on the Agenda. However, the Chairperson or other Board Member presiding at the meeting may limit the public comment for all speakers to fewer than three minutes per speaker, or make other rules to ensure that all speakers have an equal opportunity to be heard. The Chairperson or other Board Member presiding at the meeting may, with the consent of persons representing both sides of an issue, allocate a block of time (not to exceed six minutes) to each side to present their issue.

BOARD OF DIRECTORS REGULAR MEETING AGENDA

WEDNESDAY
AUGUST 1, 2018 **BOARD ROOM**
9:30 A.M. **1ST FLOOR**

CALL TO ORDER **Chairperson, David Hudson**

1. **Opening Comments**
   Roll Call
   Pledge of Allegiance

   The Chair shall call the meeting to order and make opening comments. The Clerk of the Boards shall take roll of the Board members. The Chair shall lead the Pledge of Allegiance.

PUBLIC COMMENT ON NON-AGENDA MATTERS

2. **Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3**
   For the first round of public comment on non-agenda matters at the beginning of the agenda, ten persons selected by a drawing by the Clerk of the Boards from among the Public Comment Cards indicating they wish to speak on matters not on the agenda for the meeting will have two minutes each to address the Board on matters not on the agenda. For this first round of public comments on non-agenda matters, all Public Comment Cards must be submitted in person to the Clerk of the Board at the location of the meeting and prior to commencement of the meeting.

CONSENT CALENDAR (ITEMS 3-6) **Staff/Phone (415) 749-**

3. Minutes of the Regular Board of Directors Meeting of June 6, 2018
   Clerk of the Boards/5073

   The Board of Directors will consider approving the draft minutes of the Board of Directors Meeting of June 6, 2018.

4. Board Communications Received from June 6, 2018 through July 31, 2018
   J. Broadbent/5052
   jbroadbent@baaqmd.gov

   A copy of communications directed to the Board of Directors received by the Air District from June 6, 2018 through July 31, 2018, if any, will be at each Board Member's place.

5. Air District Personnel on Out-of-State Business Travel **J. Broadbent/5052**
jbroadbent@baaqmd.gov

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

6. Notices of Violations Issued and Settlements in Excess of $10,000 in the months of May and June 2018 **J. Broadbent/5052**
jbroadbent@baaqmd.gov

In accordance with Resolution No. 2012-08, the Board of Directors will receive a list of all Notices of Violations issued, and all settlements for amounts in excess of $10,000 during the months of May and June 2018.

COMMITTEE REPORTS

7. Report of the **Technology Implementation Office Steering Committee** Meeting of April 25, 2018 **CHAIR: C. Chavez** **J. Broadbent/5052**
jbroadbent@baaqmd.gov

The Committee received the following reports:

A) Clean Cars for All: New Incentives Program for Low Income Consumers

1) None; receive and file.

B) Mission and Customer Discovery

1) None; receive and file.

C) Proposed Loan Partnership

1) None; receive and file.

D) Update on Technology Assessment Rules

1) None; receive and file.

For the full Committee agenda packet and materials, click on the link below:
www.baaqmd.gov/bodagendas

8. Report of the **Personnel Committee** Meeting of July 12, 2018

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

The Committee received the following reports:

A) Consider Reappointment of the Incumbent to the Air District's Hearing Board; Conduct Interviews; and Consider Recommending Board of Directors Approval of Candidates for Appointment to the Air District's Hearing Board

1) *Consider reappointment of the incumbent to the Air District's Hearing Board. Conduct interviews and consider recommending Board of Directors approval of candidates for appointment to the Air District's Hearing Board.*

For the full Committee agenda packet and materials, click on the link below:
www.baaqmd.gov/bodagendas

9. Report of the **Advisory Council** Meeting of July 19, 2018

BOARD LIAISON: R. Sinks **J. Broadbent/5052**
jbroadbent@baaqmd.gov

The Committee received the following reports:

A) Introduction of New Members to the Air District's Advisory Council

1) *None; receive and file.*

B) Update on Assembly Bill 617 (AB 617)

1) *None; receive and file.*

C) Health Impacts and Assessments of Diesel Particulate Matter in the Bay Area

1) *None; receive and file.*

D) Update on the Air District's Diesel Particulate Matter Emissions Reduction Strategy

1) *The Advisory Council will consider providing input to the Air District Board of Directors in support of voluntary diesel emissions reduction efforts.*

For the full Committee agenda packet and materials, click on the link below:
www.baaqmd.gov/ADVagendas

10. Report of the **Executive Committee** Meeting of July 23, 2018

CHAIR: D. Hudson **J. Broadbent/5052**

jbroadbent@baaqmd.gov

The Committee received the following reports:

A) Hearing Board Quarterly Report: April – June 2018

1) None; receive and file.

B) Recommended Assembly Bill (AB) 617 Communities for Community Plans

1) Recommend Board of Directors approve staff recommendations for community air monitoring and community emission reduction plans under the state's Community Air Protection Program.

C) Update on the Governor's Global Climate Action Summit

1) Seek support from their jurisdictions for the Diesel Free by '33 Statement of Purpose and encourage signatures from Mayor's both within and outside the Bay Area; and

2) Encourage participation from cities, counties and businesses Request at the Climate Technology Showcase event.

D) Technology Implementation Office Update and Summary of Steering Committee Meeting

1) Authorize the Executive Officer/APCO to negotiate and execute an agreement with the IBamk not to exceed $4,185,000 to fund a loan program for Bay Area industrial facilities.

E) Status Update on the Air District's Advisory Council

1) None; receive and file.

F) Amendments to Air District Administrative Code Addressing Resolutions

1) Recommend Board of Directors consideration and approval of language amending the Air District's Administrative Code to address introduction and amendment of resolutions to be adopted by the Board of Directors. If approved by the Committee, in accordance with the Air District's Administrative Code, language amending the Administrative Code will be noticed in an upcoming Board of Directors meeting agenda, and placed on the Agenda for adoption at a subsequent meeting.

G) Discussion of Procedures for Receiving Public Comment on Non-Agenda Topics

1) The Committee will discuss procedures for receiving public comment on topics not included in an item on a posted agenda.

For the full Committee agenda packet and materials, click on the link below:
www.baaqmd.gov/bodagendas

11. Report of the **Ad Hoc Refinery Oversight Committee** Meeting of July 25, 2018

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

The Committee received the following reports:

A) Trends in Crude Oil Imports, Petroleum Refining, Crude Oil Transportation and an Outlook for Future Petroleum Markets

1) *None; receive and file.*

B) Issues and Concerns Regarding Future Refinery Crude Slates

1) *None; receive and file.*

C) The Legal Framework for the Air District

1) *None; receive and file.*

For the full Committee agenda packet and materials, click on the link below:
www.baaqmd.gov/bodagendas

12. Report of the **Mobile Source Committee** Meeting of July 26, 2018

CHAIR: S. Haggerty **J. Broadbent/5052**
jbroadbent@baaqmd.gov

The Committee received the following reports:

A) Projects and Contracts with Proposed Grant Awards Over $100,000 and a Request for a Waiver for Fiscal Year Ending 2018 Transportation Fund for Clean Air Regional Fund Policies from the Town of Los Gatos

1) *Approve Carl Moyer Program and Transportation Fund for Clean Air (TFCA) projects with proposed grant awards over $100,000 as shown in Attachment 1;*

2) *Approve a policy waiver to allow the Town of Los Gatos to be eligible for funding from the Fiscal Year Ending 2018 TFCA Regional Fund for a bikeway improvement project that will upgrade an existing Class II bicycle lane to a separated Class IV bikeway; and*

3) *Authorize the Executive Officer/APCO to enter into all necessary agreements with applicants for the recommended projects.*

B) Approval of Contract for Clean Cars for All Program Case Managers

1) *Authorize the Executive Officer/APCO to execute a contract with GRID Alternatives at a cost not to exceed $250,000 for services performed in Fiscal Year Ending (FYE) 2018 and FYE 2019.*

C) New Grant Program Revenues and Request to Increase Staffing in the Strategic Incentives Division

1) Authorize the Bay Area Air Quality Management District (Air District) to accept, amend the Fiscal Year Ending 2019 budget to account for new funding, obligate, and expend up to:

A) $130 million in funding from the Volkswagen Environmental Mitigation Trust (VW Trust); and

B) $1,160,311 in funding from the United States Environmental Protection Agency.

2) Authorize the Executive Officer/APCO to enter into all agreements necessary to accept, obligate, and expend this funding; and

3) Authorize the creation of eight (8) additional full-time equivalent (FTE) positions in the Strategic Incentives and Compliance and Enforcement Divisions and Finance Section.

For the full Committee agenda packet and materials, click on the link below:
www.baaqmd.gov/bodagendas

13. Report of the **Stationary Source Committee** Meeting of July 30, 2018

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

The Committee will receive the following reports:

A) Air Pollution Complaint Process Overview

1) None; receive and file.

B) Overview of Regulation 7: Odorous Substances Rule Amendment Concepts

1) None; receive and file.

C) **Update on Implementation of AB 617 Community Air Protection**

1) None; receive and file.

For the full Committee agenda packet and materials, click on the link below:
www.baaqmd.gov/bodagendas

14. Report of the **Ad Hoc Building Oversight Committee** Meeting of August 1, 2018

CHAIR: M. Ross **J. Broadbent/5052**
jbroadbent@baaqmd.gov

The Committee will receive the following reports:

A) CONFERENCE WITH REAL PROPERTY NEGOTIATOR – (*Government Code Section 54956.8)* *The Committee will meet in closed session pursuant to Government Code Section 54956.8 to confer with real property negotiators to discuss acquisition of real property.*

Property:	4102, 4104, 4108, 4114, 4124 Lakeside Drive, Richmond, CA 94806
Air District Negotiators:	Jack P. Broadbent, Executive Officer/APCO Rex Sanders, Chief Administrative Officer
Negotiating Parties:	Bay City Mechanical
Under Negotiation:	Price and Terms

For the full Committee agenda packet and materials, click on the link below:
www.baaqmd.gov/bodagendas

PRESENTATION

15. Recommended Assembly Bill (AB) 617 Communities for Community Plans

J. Broadbent/5052
jbroadbent@baaqmd.gov

The Board of Directors will consider approving staff recommendation for community air monitoring and community emission reduction plans under the State's Community Air Protection Program.

PUBLIC HEARING

16. Public Hearing to Consider Adoption of Proposed Regulation 6, Particulate Matter - Common Definitions and Test Methods; Proposed Amendments to Regulation 6, Particulate Matter, Rule 1: General Requirements; Proposed Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout; and Approval of a CEQA, Negative Declaration

J. Broadbent/5052
jbradbent@baaqmd.gov

The Board of Directors will consider adopting proposed new Regulation 6: Common Definitions and Test Methods, proposed amendments to Regulation 6, Rule 1: General Requirements, new Regulation 6, Rule 6: Prohibition of Trackout, Adopt proposed amendments to Volume 1: Enforcement Procedures, Part 1: Assessment of Visible Emissions Opacity, and the adoption of a Negative Declaration pursuant to the California Environmental Quality Act (CEQA).

CLOSED SESSION

A) CONFERENCE WITH REAL PROPERTY NEGOTIATOR – *(Government Code Section 54956.8)* *The Board will meet in closed session pursuant to Government Code Section 54956.8 to confer with real property negotiators to discuss acquisition of real property.*

Property:	4102, 4104, 4108, 4114, 4124 Lakeside Drive, Richmond, CA 94806
Air District Negotiators:	Jack P. Broadbent, Executive Officer/APCO Rex Sanders, Chief Administrative Officer
Negotiating Parties:	Bay City Mechanical
Under Negotiation:	Price and Terms

OPEN SESSION

PUBLIC COMMENT ON NON-AGENDA MATTERS

17. **Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3**

Speakers who did not have the opportunity to address the Board in the first round of comments on non-agenda matters will be allowed two minutes each to address the Board on non-agenda matters.

BOARD MEMBERS' COMMENTS

18. *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)*

OTHER BUSINESS

19. Report of the Executive Officer/APCO

20. Chairperson's Report

21. Time and Place of Next Meeting:

Wednesday, September 5, 2018, at 375 Beale Street, San Francisco, CA 94105 at 9:30 a.m.

22. Adjournment

The Board meeting shall be adjourned by the Board Chair.

CONTACT:
MANAGER, EXECUTIVE OPERATIONS **(415) 749-4941**
375 BEALE STREET, SAN FRANCISCO, CA 94105 **FAX: (415) 928-8560**
vjohnson@baaqmd.gov **BAAQMD homepage:**
www.baaqmd.gov

- To submit written comments on an agenda item in advance of the meeting. Please note that all correspondence must be addressed to the "Members of the Board of Directors" and received at least 24 hours prior, excluding weekends and holidays, in order to be presented at that Board meeting. Any correspondence received after that time will be presented to the Board at the following meeting.

- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.

- Any writing relating to an open session item on this Agenda that is distributed to all, or a majority of all, members of the body to which this Agenda relates shall be made available at the District's offices at 375 Beale Street, Suite 600, San Francisco, CA 94105, at the time such writing is made available to all, or a majority of all, members of that body.

Accessibility and Non-Discrimination Policy

The Bay Area Air Quality Management District (Air District) does not discriminate on the basis of race, national origin, ethnic group identification, ancestry, religion, age, sex, sexual orientation, gender identity, gender expression, color, genetic information, medical condition, or mental or physical disability, or any other attribute or belief protected by law.

It is the Air District's policy to provide fair and equal access to the benefits of a program or activity administered by Air District. The Air District will not tolerate discrimination against any person(s) seeking to participate in, or receive the benefits of, any program or activity offered or conducted by the Air District. Members of the public who believe they or others were unlawfully denied full and equal access to an Air District program or activity may file a discrimination complaint under this policy. This non-discrimination policy also applies to other people or entities affiliated with Air District, including contractors or grantees that the Air District utilizes to provide benefits and services to members of the public.

Auxiliary aids and services including, for example, qualified interpreters and/or listening devices, to individuals who are deaf or hard of hearing, and to other individuals as necessary to ensure effective communication or an equal opportunity to participate fully in the benefits, activities, programs and services will be provided by the Air District in a timely manner and in such a way as to protect the privacy and independence of the individual. Please contact the Non-Discrimination Coordinator identified below at least three days in advance of a meeting so that arrangements can be made accordingly.

If you believe discrimination has occurred with respect to an Air District program or activity, you may contact the Non-Discrimination Coordinator identified below or visit our website at www.baaqmd.gov/accessibility to learn how and where to file a complaint of discrimination.

Questions regarding this Policy should be directed to the Air District's Non-Discrimination Coordinator, Rex Sanders, at (415) 749-4951 or by email at rsanders@baaqmd.gov.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 BEALE STREET, SAN FRANCISCO, CALIFORNIA 94105
FOR QUESTIONS PLEASE CALL (415) 749-4941

EXECUTIVE OFFICE:
MONTHLY CALENDAR OF AIR DISTRICT MEETINGS

JULY 2018

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Stationary Source Committee *(Meets on the 3rd Monday of every other Month)*	**Monday**	**30**	**9:30 a.m.**	**1st Floor Board Room**

AUGUST 2018

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Special Meeting as The Sole Member of The Bay Area Clean Air Foundation *(At the Call of the Chair)* **- CANCELLED**	**Wednesday**	**1**	**9:00 a.m.**	**1st Floor Board Room**
Board of Directors Ad Hoc Building Oversight Committee Meeting *(At the Call of the Chair)*	**Wednesday**	**1**	**9:00 a.m.**	**1st Floor Board Room**
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**1**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)* **- CANCELLED**	**Wednesday**	**15**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Budget & Finance Committee *(Meets on the 4th Wednesday of each Month)* **- CANCELLED**	**Wednesday**	**22**	**9:30 a.m.**	**1st Floor, Yerba Buena Room #109**
Board of Directors Mobile Source Committee *(Meets on the 4th Thursday of each Month)* **- CANCELLED**	**Thursday**	**23**	**9:30 a.m.**	**1st Floor Board Room**

SEPTEMBER 2018

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**5**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Stationary Source Committee *(Meets on the 3rd Monday of every other Month)*	**Monday**	**17**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**19**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Climate Protection Committee *(Meets on the 3rd Thursday of every other Month)*	**Thursday**	**20**	**9:30 a.m.**	**1st Floor Board Room**

SEPTEMBER 2018

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Budget & Finance Committee *(Meets on the 4th Wednesday of each Month)*	**Wednesday**	**26**	**9:30 a.m.**	**1st Floor, Yerba Buena Room #109**
Board of Directors Mobile Source Committee *(Meets on the 4th Thursday of each Month)*	**Thursday**	**27**	**9:30 a.m.**	**1st Floor, Yerba Buena Room #109**

OCTOBER 2018

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**3**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**17**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors TIO Steering Committee *(At the Call of the Chair)*	**Monday**	**22**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Budget & Finance Committee *(Meets on the 4th Wednesday of each Month)*	**Wednesday**	**24**	**9:30 a.m.**	**1st Floor, Yerba Buena Room #109**
Board of Directors Mobile Source Committee *(Meets on the 4th Thursday of each Month)*	**Thursday**	**25**	**9:30 a.m.**	**1st Floor Board Room**

HL – 7/27/18 – 8:10 a.m. **G/Board/Executive Office/Moncal**

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 18, 2018

Re: Minutes of the Board of Directors Regular Meeting of June 6, 2018

RECOMMENDED ACTION

Approve the attached draft minutes of the Board of Directors Regular Meeting of June 6, 2018.

DISCUSSION

Attached for your review and approval are the draft minutes of the Board of Directors Regular Meeting of June 6, 2018.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Marcy Hiratzka
Reviewed by: Vanessa Johnson

Attachment 3A: Draft Minutes of the Board of Directors Regular Meeting of June 6, 2018

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
(415) 749-5073

Board of Directors Regular Meeting
Wednesday, June 6, 2018

DRAFT MINUTES

Note: Audio recordings of the meeting are available on the website of the Bay Area Air Quality Management District at www.baaqmd.gov/bodagendas

CALL TO ORDER

1. **Opening Comments:** Board of Directors (Board) Chairperson, David Hudson, called the meeting to order at 9:32 a.m.

   Roll Call:

   Present: Chairperson David Hudson; Vice Chair Katie Rice; Secretary Rod Sinks; and Directors Margaret Abe-Koga, Teresa Barrett, John J. Bauters, David Canepa, Cindy Chavez, John Gioia, Scott Haggerty, Tyrone Jue, Doug Kim, Liz Kniss, Nate Miley, Karen Mitchoff, Hillary Ronen, Mark Ross, Jim Spering, Brad Wagenknecht, and Shirlee Zane.

   Absent: Directors Pauline Russo Cutter, Carole Groom, and Pete Sanchez.

CONSENT CALENDAR (ITEMS 2 – 7)

2. Minutes of the Board of Directors Special Meeting Budget Hearing of May 2, 2018 and Regular Meeting of May 2, 2018
3. Board Communications Received from May 2, 2018 through June 5, 2018
4. Air District Personnel on Out-of-State Business Travel
5. Notices of Violations Issued and Settlements in excess of $10,000 during the month of April 2018
6. Quarterly Report of the Executive Office and Division Activities for the Months of January 2018 to March 2018
7. Authorization to Execute Contract Amendments for Production System Office

Public Comments:

No requests received.

Board Comments:

None.

Board Action:

Director Haggerty made a motion, seconded by Director Kniss, to **approve** the Consent Calendar Items 2 through 7 inclusive; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Bauters, Canepa, Chavez, Gioia, Haggerty, Hudson, Jue, Kim, Kniss, Mitchoff, Rice, Ross, Sinks, Spering, and Wagenknecht.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Cutter, Groom, Miley, Ronen, Sanchez, and Zane.

COMMITTEE REPORTS

8. Report of the Personnel Committee Meeting of May 7, 2018

Personnel Committee Chair, Director Jim Spering, read the following Committee report:

The Committee met on Monday, May 7, 2018, and approved the minutes of February 7, 2018.

The Committee discussed two vacancies on the Air District's Advisory Council, as former Council members, Robert Harley and Tam Doduc, declined consideration for reappointment at the expiration of their two-year term on the Council. The Committee then discussed the District's recruitment process. The Committee then interviewed five candidates. The Committee recommends the Board approve:

1. *The reappointment of the five incumbent Council members who wish to continue serving: Chair Stan Hayes, Vice Chair Michael Kleinman, and members Severin Borenstein, Tim Lipman, and Jane Long;*
2. *The appointment of Gina M. Solomon, Medical Doctor, Master of Public Health, to the Advisory Council for a two-year term; and*
3. *The appointment of Linda Rudolph, Medical Doctor, Master of Public Health, to the Advisory Council for a two-year term.*

The next meeting of the Personnel Committee will be held on Thursday, July 12, 2018, at 9:30 a.m., at the Bay Area Air Quality Management District Office, 375 Beale Street, Board Room, San Francisco, California 94105. I move that the Board approve the Personnel Committee recommendations. This concludes the Chair Report of the Personnel Committee.

Public Comments:

Public comments were given by Jan Warren, Interfaith Climate Action Network of Contra Costa County (ICANCCC); Richard Gray, Jed Holtzman, and Janet Stromberg, 350 Bay Area.

Board Comments:

The Committee and staff discussed the original recruitment and appointment processes in 2015 of the five current Advisory Council members and their subsequent reappointment to the Advisory Council in 2018; and the Board's appreciation for the service of the five current Advisory Council members.

NOTED PRESENT: Director Zane was noted present at 9:44 a.m.

Board Action:

Director Spering made a motion, seconded by Director Wagenknecht, to **approve** the recommendations of the Personnel Committee; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Bauters, Canepa, Chavez, Gioia, Haggerty, Hudson, Jue, Kim, Kniss, Mitchoff, Rice, Ross, Sinks, Spering, Wagenknecht, and Zane.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Cutter, Groom, Miley, Ronen, and Sanchez.

9. **Report of the Stationary Source Committee Meeting of May 21, 2018**

Stationary Source Committee Chair, Director John Gioia, read the following Committee report:

The Committee met on Monday, May 21, 2018, and approved the minutes of March 19, 2018.

The Committee reviewed and discussed the staff presentation Update on the Assembly Bill 617-Required Best Available Retrofit Control Technology Review.

The Committee then reviewed and discussed the staff presentation Update on the Air District's Basin-Wide Methane Strategy.

Finally, the Committee reviewed and discussed the staff presentation Implementation Update on Regulation 11, Rule 18 - Reduction of Risk from Air Toxic Emissions at Existing Facilities.

The next meeting of the Committee is at the call of the Chair. This concludes the Chair report of the Stationary Source Committee.

Public Comments:

No requests received.

Board Comments:

None.

Board Action:

None; receive and file.

10. **Report of the Mobile Source Committee Meeting of May 24, 2018**

Mobile Source Committee Chair, Director Scott Haggerty, read the following Committee report:

The Committee met on Thursday, May 24, 2018, and approved the minutes of April 26, 2018.

The Committee reviewed and discussed the staff presentation, Projects and Contracts with Proposed Grant Awards Over $100,000. *The Committee recommends the Board:*

1. *Approve Carl Moyer Program and Transportation Fund for Clean Air projects with proposed grant awards over $100,000 as shown in Attachment 1; and*
2. *Authorize the Executive Officer/Air Pollution Control Officer to enter into all necessary agreements with applicants for the recommended projects.*

The Committee then reviewed and discussed the staff presentation Fiscal Year Ending 2019 Transportation Fund for Clean Air Regional Fund Policies and Evaluation Criteria. *The Committee recommends the Board:*

1. *Approve the proposed Fiscal Year Ending 2019 Transportation Fund for Clean Air Regional Fund Policies and Evaluation Criteria presented in Attachment A.*

Finally, the Committee reviewed and discussed the staff presentation New Program: Clean and Electric Vehicle Adoption in Disadvantaged Communities.

The next meeting of the Mobile Source Committee will be held on Thursday, July 26, 2018, at 9:30 a.m., at the Bay Area Air Quality Management District office, 375 Beale Street, San Francisco, CA 94105. I move that the Board approve the Mobile Source Committee's recommendations. This concludes the Chair Report of the Mobile Source Committee

Public Comments:

No requests received.

Board Comments:

None.

Board Action:

Director Haggerty made a motion, seconded by Director Ross, to **approve** the recommendations of the Mobile Source Committee; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Bauters, Canepa, Chavez, Gioia, Haggerty, Hudson, Jue, Kim, Kniss, Mitchoff, Rice, Ross, Sinks, Spering, Wagenknecht, and Zane.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Cutter, Groom, Miley, Ronen, and Sanchez.

11. **Report of the Climate Protection Committee Meeting of June 4, 2018**

Climate Protection Committee Chair, Teresa Barrett, read the following Committee report:

The Climate Protection Committee met on Monday, June 4, 2018, and approved the minutes of March 15, 2018.

The Committee received and discussed the staff presentation Climate Protection Grant Program. *The Committee recommends the Board:*

1. *Approve proposed projects for the 2018 Climate Protection Grant Program and authorization for the Executive Officer/Air Pollution Control Officer to execute grant agreements for the recommended projects.*

Finally, the Committee received and discussed the staff presentation Consumption-Based Greenhouse Gas (GHG) Emissions Inventory.

The next meeting of the Committee will be at the call of the Chair. I move that the Board approve the Climate Protection Committee's recommendations. Also, based on the Grants Projects we are recommending today – The Committee has asked the staff to give a brief presentation to the Full Board regarding the program. This concludes the Chair report of the Climate Protection Committee.

At this time, Abby Young, Climate Protection Manager, gave staff presentation *2018 Climate Protection Grant Program,* including: results; kick-starting regional transformation; and high-level outcomes.

NOTED PRESENT: Director Ronen was noted present at 9:53 a.m.

Public Comments:

Public comments were given by Janet Stormberg, 350 Bay Area.

Board Comments:

The Board and staff discussed the Board's appreciation for project applications serving multiple counties; the District's outreach process when advertising this program to prospective applicants; the number of applications that were received and the District's application evaluation process; whether a formula to more accurately estimate GHG emission reductions within a project is needed; recommended projects that are anticipated to produce long-term benefits; the request that public documents listing awarded projects specify that matching funds are associated with applicable projects; finding the balance between funding technology versus incentives to modify human behavior; the metrics the District plans to use to measure the progress and success of the projects; and concerns about the project application from Contra Costa County regarding web-based community engagement.

Board Action:

Director Barrett made a motion, seconded by Director Sinks, to **approve** the recommendations of the Climate Protection Committee; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Bauters, Canepa, Chavez, Gioia, Haggerty, Hudson, Jue, Kim, Kniss, Mitchoff, Rice, Ronen, Ross, Sinks, Spering, Wagenknecht, and Zane.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Cutter, Groom, Miley, and Sanchez

12. **Report of the Ad Hoc Building Oversight Committee Meeting of June 6, 2018**

Ad Hoc Building Oversight Chair, Director Mark Ross, read the following Committee report:
The Ad Hoc Building Oversight Committee met on Wednesday, June 6, 2018, and approved the minutes of April 18, 2018.

The Committee received and discussed the staff presentation Discussion of Space on the Eighth Floor of 375 Beale Street and Recommendation to Purchase. *The Committee met in Closed Session to receive an update on the Richmond Property, but there is no reportable action. The Committee recommends the Board:*

1. *Approve the purchase of approximately 11,400 rentable square feet, but not more than 13,000 rentable square feet, on the 8th Floor of 375 Beale Street, in substantially the form of Attachment A, Purchase and Sale Agreement and Joint Escrow Instructions, at a price of $385/rentable square feet, with a total purchase price not to exceed $5,005,000, and authorize the Executive Officer to negotiate and execute the Purchase and Sale Agreement and Joint Escrow Instructions with the Bay Area Headquarters Authority, and to negotiate and execute amended Covenants, Conditions, and Restrictions.*

The next meeting of the Ad Hoc Building Oversight Committee will be at the call of the Chair. I move that the Board approve the Ad Hoc Building Oversight Committee's recommendations. This concludes the Chair report of the Ad Hoc Building Oversight Committee.

Public Comments:

No requests received.

Board Comments:

None.

Board Action:

Director Ross made a motion, seconded by Director Kniss, to **approve** the recommendations of the Ad Hoc Building Oversight Committee; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Bauters, Canepa, Chavez, Gioia, Haggerty, Hudson, Jue, Kim, Kniss, Mitchoff, Rice, Ronen, Ross, Sinks, Spering, Wagenknecht, and Zane.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Cutter, Groom, Miley, and Sanchez.

PRESENTATION

13. Governor's Global Climate Action Summit 2018

Jack Broadbent, Executive Officer/Air Pollution Control Officer, introduced Lisa Fasano, Communications Officer, who, with Ms. Young, gave the staff presentation *Governor's Global Climate Action Summit and Bay Area Air Quality Management District (BAAQMD) Affiliated Event,* including: Governor's Global Climate Action Summit; BAAQMD affiliated forum; forum agenda; and Diesel-Free by 33 Pledge.

Public Comments:

Public comments were given by Jed Holtzman and Janet Stromberg, 350 Bay Area.

Board Comments:

The Board and staff discussed the request for more defined information, talking points, resolution language that includes county health data/health impacts, and associated action that can affect behavior/diesel use regarding the Diesel-Free by 33 pledge; stakeholders whose compliance with the pledge may be the most difficult to achieve; the anticipated pledge-compliance timelines of jurisdictions outside of the Bay Area; the District's plans to produce a publication regarding the benefits of banning diesel; the need for outreach to County Health Officers and Bay Area jurisdictions' sister cities about the pledge; the request that the pledge not focus solely on diesel, but other emissions as well; the request that the District publicly specifies that efforts to address highly-impacted communities will commence prior to 2033; and the California Air Resources Board's rule development that would require transit agencies to have all zero-emission bus fleets.

NOTED PRESENT: Director Miley was noted present at 10:49 a.m.

Board Action:

None; receive and file.

PUBLIC HEARINGS

14. Public Hearing to Consider Adoption of Proposed Amendments to Air District 3: Fees, and Approval of the Filing of a Notice of Exemption for the California Environmental Equality Quality Act

Dr. Jeff McKay, Chief Financial Officer, stated that the first of two required Public Hearings regarding this item was held on April 18, 2018. He stated that no public comments were given at the first hearing, and none were submitted at the second Public Hearing. Dr. McKay asked if the Board wished to see his presentation that was given during the first Public Hearing, and at the consensus of the Board members present, Dr. McKay was not required to repeat the presentation. Dr. McKay stated that, if approved by the Board, the proposed amendments to Air District Regulation 3: Fees would become effective on July 1, 2018.

Chair Hudson opened the Public Hearing to Consider Adoption of Proposed Amendments to Air District 3: Fees, and Approval of the Filing of a Notice of Exemption for the California Environmental Equality Quality Act.

Public Comments:

No requests received.

Board Comments:

None.

Chair Hudson closed the Public Hearing.

Board Action:

Director Wagenknecht made a motion, seconded by Director Mitchoff, to **adopt** the proposed amendments to Air District Regulation 3: Fees, which would become effective on July 1, 2018, and **approve** a Notice of Exemption from the California Environmental Quality Act; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Bauters, Chavez, Gioia, Haggerty, Hudson, Jue, Kim, Kniss, Miley, Mitchoff, Rice, Ronen, Sinks, Spering, Wagenknecht, and Zane.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Canepa, Cutter, Groom, Ross, and Sanchez.

15. **Public Hearing to Consider Adoption of the Air District's Proposed Budget for Fiscal Year Ending 2019**

Dr. Jeff McKay, Chief Financial Officer, stated that the first of two required Public Hearings regarding this item was held on May 2, 2018. He stated that no public comments were given at the first hearing, and none were submitted at the second Public Hearing. Dr. McKay asked if the Board wished to see his presentation that was given during the first Public Hearing, and at the consensus of the Board members present, Dr. McKay was not required to repeat the presentation.

Chair Hudson opened the Public Hearing to Consider Adoption of the Air District's Proposed Budget for Fiscal Year Ending 2019.

Public Comments:

No requests received.

Board Comments:

None.

Chair Hudson closed the Public Hearing.

Board Action:

Director Mitchoff made a motion, seconded by Director Wagenknecht, to **adopt** a resolution to **approve** the Proposed Budget for FYE 2019 and various budget-related actions; and the motion **carried** by the following vote of the Board:

AYES:	Abe-Koga, Barrett, Bauters, Canepa, Chavez, Gioia, Haggerty, Hudson, Jue, Kim, Kniss, Miley, Mitchoff, Rice, Ronen, Ross, Sinks, Spering, Wagenknecht, and Zane.
NOES:	None.
ABSTAIN:	None.
ABSENT:	Cutter, Groom, and Sanchez.

PUBLIC COMMENT ON NON-AGENDA MATTERS

16. **Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3**

Public comments were given by Richard Gray, 350 Bay Area; and Jan Warren (ICANCCC)

BOARD MEMBER COMMENTS

17. The following comments were made by Board members:

- Director Zane announced that she was recently asked to serve on the Board of Directors of the National Council for Science and the Environment in Washington DC.
- Director Jue thanked District staff for addressing the smoke and odor complaints about Espetus Churrascaria steakhouse in San Francisco in conjunction with his and Director Ronen's offices. He said he looks forward to potential amendments to existing District Regulation.
- Director Kniss announced that many city council members may be attending the League of California Cities' Annual Conference, which conflicts with the Governor's Global Climate Action Summit in September 2018.
- Director Sinks, Barrett, and Gioia spoke about an advertisement that has been on Facebook since January 2018.

OTHER BUSINESS

18. **Report of the Executive Officer/Air Pollution Control Officer**

Mr. Broadbent announced the following:

- Staff will report back to the Board regarding the District's diversity efforts.
- Thanks to Dr. McKay and the Finance Office for preparing the FYE 2019 Proposed Budget.
- The District has not yet reached national ozone exceedances in 2018.
- Compliance and Enforcement staff will give a status update on the smoke and odor complaints about the steakhouse in San Francisco; there are similar complaints from a grill in Petaluma.
- The District's Executive Office hired new Executive Assistants, Karen Wiess and Justine Buenaflor.

19. Chairperson's Report

Chair Hudson announced the following:

- District staff and Stationary Source/Ad Hoc Refinery Oversight Committee members will take a tour of the Athabasca oil sands in Alberta, Canada on August 13.
- Congratulations to Directors Gioia, Groom, Mitchoff, Spering, and Wagenknecht for being reelected to serve in their current Supervisorial roles in the primary election.
- The following meetings have been cancelled: June 20, July 4, July 18 Board meetings; and July 19 Climate Protection Committee meeting.

20. Time and Place of Next Meeting

Wednesday, August 1, 2018, at 375 Beale Street, San Francisco, CA 94105 at 9:30 am.

21. Adjournment

The meeting adjourned at 11:34 a.m.

Marcy Hiratzka
Clerk of the Boards

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 17, 2018

Re: Board Communications Received from June 6, 2018 through July 31, 2018

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

Copies of communications directed to the Board of Directors received by the Air District from June 6, 2018, through July 31, 2018, if any, will be at each Board Member's place at the August 1, 2018, Board meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 25, 2018

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

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

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

The report covers the out-of-sate business travel for the month of January 2018. The monthly out-of-state business travel report is presented in the month following travel completion.

DISCUSSION

The following out-of-state business travel activities occurred in the month of June 2018:

111th Annual Air & Waste Management Association Conference and Exhibition in Hartford, Connecticut, June 25-28, 2018 Attendees:

- John Bauters, Board of Directors (Director)
- David Hudson, Board of Directors (Chair)
- Mark Ross, Board of Directors (Director)
- Brad Wagenknecht, Board of Directors (Director)
- Stan Hayes, Advisory Council (Chair)
- Michael Kleinman, Advisory Council (Member)
- Jack Broadbent, Executive Officer
- Brian Bunger, Counsel
- Damian Breen, Deputy Air Pollution Control Officer
- Wayne Kino, Deputy Air Pollution Control Officer
- Rex Sanders, Chief Administrative Officer
- Ranyee Chiang, Director
- Jeff Gove, Director

- Henry Hilken, Director
- Maricela Martinez, Director
- Eric Stevenson, Director
- Ken Mak, Acting Supervising Staff Specialist
- Carol Allen, Assistant Manager

The 26th International Conference on Modeling, Monitoring and Management of Air Pollution, Naples, Italy, June 19 – June 21, 2018 Attendee:

- Jack P. Broadbent, Executive Officer/APCO

Roadmap 11 Conference, Portland, Oregon, June 17 – June 20, 2018 Attendee:

- Mark Tang, Administrative Analyst

World Health Organization Health in All Policies Workshop, Washington, DC, June 17 – June 20, 2018 Attendee:

- Luz Gomez, Air Quality Program Manager

STEM Career Fair, Washington, DC, June 7 – June 11, 2018 Attendee:

- David Minuk, Human Resources Analyst

EPA Workshop: Deliberating Performance Targets for Air Quality Sensors, Durham, NC, June 23 – June 27, 2018 Attendee:

- Katherine Hoag, Principal Air Quality Engineer

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Stephanie Osaze
Reviewed by: Jeff McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 25, 2018

Re: Notices of Violations Issued and Settlements in excess of $10,000 during the months of May and June 2018

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

In accordance with Resolution No. 2012-08, attached to this Memorandum is a listing of all Notices of Violations issued, and all settlements for amounts in excess of $10,000 during the calendar months prior to this report.

BUDGET CONSIDERATION/FINANCIAL IMPACT

The amounts of civil penalties collected are included in the Air District's general fund budget.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Brian C. Bunger

Attachments 6A: Notices of Violations for the Month of May 2018
Attachments 6B: Notices of Violations for the Month of June 2018

NOTICES OF VIOLATION ISSUED

The following Notice(s) of Violation were issued in May 2018:

Alameda

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
A B & I Foundry	A0062	Oakland	A56401A	5/3/2018	2-6-307	PC 9668 Pt 1Operating S-25 without abatement
Lam Research Corporation - Fremont Campus	A3152	Fremont	A57010A	5/31/2018	2-1-307	Unapproved run time(P/C#22820-2); RCA# 07H18, 07H21
P.W. Stephens Environmental, Inc.	Y5159	Fremont	A58036A	5/14/2018	11-2-401.3	Improper notification
Royal Gas	Z4281	Oakland	A57423A	5/2/2018	2-1-307	Failure to conduct annual vapor recovery 2017 source testing within 12 months.
Tesla, Inc	A1438	Fremont	A55789A	5/7/2018	2-6-307	PC #26027, Sections E.10 & G.10
Tesla, Inc	A1438	Fremont	A55790A	5/7/2018	2-1-301	No A/C and no P/O.
Tesla, Inc	A1438	Fremont	A55790B	5/7/2018	2-1-302	No A/C and no P/O.
Waste Management of Alameda County	A2066	Livermore	A57386A	5/15/2018	2-6-307	Failure to continuously abate emissions

Contra Costa

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Chevron Products Company	A0010	Richmond	A57552A	5/17/2018	10	Failed to inspect R650 as required in 40 CFR 60.592(a) Dev 4719.-

Chevron Products Company	A0010	Richmond	A57552B	5/17/2018	8-18-401.2	Failed to inspect R650 as required in 40 CFR 60.592(a) Dev 4719.-
Chevron Products Company	A0010	Richmond	A58129A	5/17/2018	12-11-502.3.1	1 flare sample were not compliant with reg. 12-11 Dev #4724.
Chevron Products Company	A0010	Richmond	A58131A	5/17/2018	2-6-307	Failed source test on 4/7/17 and 5/3/17; 4814 related to settlement agreement signed 1/18/18.
Chevron Products Company	A0010	Richmond	A58132A	5/17/2018	2-1-301	Installed burner tips without AC: Dev 4814 related to settlement agreement signed 1/18/18.
Dow Chemical Company	A0031	Pittsburg	A57639A	5/21/2018	2-6-307	P/C #4780 Part 3 – Ammonia Emissions < 0.02 lbs/day
Gateway Generating Station	B8143	Antioch	A56925A	5/7/2018	2-6-307	NOx excess at S#41 exceeded P/C#18138 limit
Kellog Creek Agregates,Inc	A6330	Byron	A56924A	5/18/2018	2-1-307	Violation of P/C#15474: No records for sand throughput.
New NGC, Inc	A0706	Richmond	A56497A	5/1/2018	6-1-301	Ringelmann No. 1 Limitation
Phillips 66 Carbon Plant	A0022	Rodeo	A57710A	5/10/2018	2-6-307	Emissions not abated by baghouse A-10.
Pinole Rodeo Auto Wreckers	B9653	Rodeo	A57711A	5/22/2018	2-1-301	No A/C and no P/O.
Pinole Rodeo Auto Wreckers	B9653	Rodeo	A57711B	5/22/2018	2-1-302	No A/C and no P/O.
Shell Chemical LP	B2870	Martinez	A57594A	5/15/2018	8-5-306.2	Not gas tight.
Shell Martinez Refinery	A0011	Martinez	A57593A	5/2/2018	2-6-307	EO7F78 PC#12271 Part 35 N0x>10 ppm/ 3hr avg

Tesoro Refining & Marketing Company LLC	B2758	Martinez	A56273A	5/3/2018	2-6-307	Did not meet p/c #8535.2. Late reporting.
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A56274A	5/3/2018	8-10-302	Incomplete vessel depressurization records. 2017
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A56274B	5/3/2018	8-10-503	Incomplete vessel depressurization records. 2017
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A56275A	5/3/2018	8-5-322.1	Gap discovered on sec. seal of IFR Tk-696
Tesoro Refining & Marketing Company LLC	B2758	Pacheco	A56275A	5/3/2018	8-5-322.1	Gap discovered on sec. seal of IFR Tk-696
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A56276A	5/3/2018	2-6-307	Exceeded p/c > 19199 H4. NOx>ppm/3
West Contra Costa County Landfill	A1840	Richmond	A56039A	5/21/2018	5-301.1	Prohibited fire at compost operation curing pile.

Santa Clara

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Chevron Products Company	A0049	San Jose	A57506A	5/8/2018	8-5-305.5	Weld seam failure at S#8 (tank#148). Linked to Breakdown#07G45.
ENS Technology LLC	B6870	Santa Clara	A57505A	5/3/2018	2-1-307	NOV voided.

Solano

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Valero Refining Company - California	B2626	Benicia	A57341A	5/14/2018	1-522.4	Failure to report inoperative monitor on time.

Valero Refining Company - California	B2626	Benicia	A57342A	5/14/2018	8-5-304	Four pinhole leaks discovered on regulated tank shell
Valero Refining Company - California	B2626	Benicia	A57344A	5/14/2018	8-5-306.2	PV valve leak >500 ppm on regulated tank.
Valero Refining Company - California	B2626	Benicia	A57343A	5/4/2018	9-8-530	No monthly engine hours records.

SETTLEMENTS FOR $10,000 OR MORE REACHED

There were 3 settlement(s) for $10,000 or more completed in May 2018.

1) On May 10, 2018, the District reached settlement with Phillips 66 Company for $99,400, regarding the allegations contained in the following 13 Notices of Violation:

NOV #	Issuance Date	Occurrence Date	Regulation	Comments from Enforcement
A52552A	3/24/16	9/1/15	2-6-307	5324 inspections per p/c 1440 port 4a net complete
A52553A	3/28/16	3/28/16	8-8-303	7 leaks total on afterbay & forebay hatches
A53834A	1/13/15	1/12/15	8-18-301	Total organic compound leak > 100 ppm at Venturi
A53836A	2/26/15	10/17/14	2-6-307	Source 465 vapors vented to atmosphere in violation of p/c 22964, part 3
A53838A	3/11/15	10/29/14	2-6-307	Deviation 4042, p/c 23724, 12 tanks vented to atmosphere instead of to A7
A53841A	6/17/15	6/17/15	8-5-306	8-5-306.2 Pressure vacuum valve on tank 294 not gas-tight
A53842A	6/17/15	6/17/15	8-5-306	8-5-306.2 PVV and gauge hatch on Tank 269 not gas tight
A53843A	8/11/15	8/6/15	8-5-306	PVV on TANK 223 not gas tight
A53844A	9/30/15	12/20/14	2-6-307	DEV 4239. P/C 12122, PT 14, POC source test results submitted late
A53845A	9/30/15	7/1/15	2-6-307	Dev 4264, NOC in excess of p/c 21097 pt 3b limit
A53848A	1/12/16	8/12/15	1-522.6	Failed FAT test O2, deviation 4299

A53849A	2/9/16	9/24/15	2-6-307	DEV 4332 CO emissions in excess of p/c 23125, part 76 limit.
A56354A	7/21/16	11/4/15	2-6-307	NOx in excess of P/C 1694, E4 limit. Deviation 4359.

2) On May 15, 2018, the District reached settlement with SFPP, LP for $70,000, regarding the allegations contained in the following 5 Notices of Violation:

NOV #	Issuance Date	Occurrence Date	Regulation	Comments from Enforcement
A56252A	5/11/17	2/8/16	8-5-320.3	Inaccessible openings on internal floating tanks
A56491A	9/6/17	9/6/17	8-5-403	Failure to inspect valves
A56506A	9/22/16	3/30/16	8-33-301	Failed source test OS-6314 on Vapor Burner
A56513A	5/3/17	5/1/17	2-6-307	No permanently installed H20 pressure gauge for Sources 21-25, Loading Racks
A56514A	5/5/17	5/1/17	8-33-309.6	Loading racks not vapor & liquid leak tight . Sources 21, 23, & 25.
A56514B	5/5/17	5/1/17	8-33-309.5	Loading racks not vapor & liquid leak tight . Sources 21, 23, & 25.

3) On May 31, 2018, the District reached settlement with Criterion Catalysts & Technologies, LP for $13,000, regarding the allegations contained in the following 4 Notices of Violation:

NOV #	Issuance Date	Occurrence Date	Regulation	Comments from Enforcement
A54529A	3/28/16	9/25/15	2-1-307	CO Excess over limit (06W41)
A56381A	10/25/16	2/27/16	2-6-307	RCA 06Y18 Condition 15672.8 Exceeded CO
A56382A	10/25/16	3/3/16	2-6-307	RCA 06Y26, Exceeded CO
A57678A	10/17/17	3/6/17	1-522.7	Failure to report excess within 96 hours

NOTICES OF VIOLATION ISSUED

The following Notice(s) of Violation were issued in June 2018:

Alameda						
Site Name	**Site #**	**City**	**NOV #**	**Issuance Date**	**Regulation**	**Comments**
A B & I Foundry	A0062	Oakland	A57878A	6/28/18	2-6-307	Draft pressure below 3 hour average.
Alameda County GSA	A8996	Dublin	A57387A	6/28/18	9-7-403	No annual source test/Initial demonstration of compliance.
Alameda County GSA	A8996	Dublin	A57387B	6/28/18	9-7-506	No annual source test/Initial demonstration of compliance.
Arco Gas Station	U1758	Hayward	A57272A	6/12/18	8-7-302.1	Torn hose (>50% circumference) #1 & #6
Au Energy LLC	Z1937	Fremont	A58240A	6/13/18	8-7-307	Nozzle operation instructions not posted (after NTC A46671)
EJR Construction	Z4471	San Lorenzo	A58042A	6/21/18	11-2-401.3	Demo prior to 10 day notification.
Green Petroleum LLC	Z4365	Livermore	A57274A	6/13/18	8-7-301.6	Out of tolerance leak rate of drop tube and drain valve.
SFD	Z4417	Oakland	A58405A	6/20/18	11-2-401.3	11-2-401.3 Failure to notify.
Southwest Hazard Control, Inc	G2514	San Leandro	A58043A	6/26/18	11-2-401.5	Inaccurate start date
Synergy Enterprises	L3268	Hayward	A58044A	6/28/18	11-2-304.1	RACM waste not in leak-tight containers.
T4 Company	Z4421	Oakland	A58040A	6/5/18	11-2-401.5	Inaccurate start date.

Tesla, Inc	A1438	Fremont	A55791A	6/4/18	2-1-301	No P/O and No A/C.
Tesla, Inc	A1438	Fremont	A55791B	6/4/18	2-1-302	No P/O and No A/C.

Contra Costa

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Ameresco Keller Canyon LLC	B7667	Bay Point	A57641A	6/20/18	1-523.1	RCA not notified in time/late reporting.
Ameresco Keller Canyon LLC	B7667	Bay Point	A57641B	6/20/18	2-6-307	RCA not notified in time/late reporting.
Antioch Building Materials Company	A0092	Bay Point	A56926A	6/28/18	2-1-301	No P/O.
Gas City	Z4462	Antioch	A58242A	6/26/18	2-1-307	No current valid VP Operability test results. Missing nozzle instruction/compl number on 11 pumps.
Gas City	Z4462	Antioch	A58242B	6/26/18	8-7-307	No current valid VP Operability test results. Missing nozzle instruction/compl number on 11 pumps.
Harbour Way Mini Mart	Z4461	Richmond	A58244A	6/28/18	2-1-307	1)Failed to complete 2017 annual tests 2)Pressure sensor tubing disconnected from vapor riser
Harbour Way Mini Mart	Z4461	Richmond	A58244B	6/28/18	8-7-302.2	1)Failed to complete 2017 annual tests 2)Pressure sensor tubing disconnected from vapor riser
Mt Diablo Unified School District	E3675	Concord	A58058A	6/29/18	11-2-401.3	Failure to notify. No survey.
Mt Diablo Unified School District	E3675	Concord	A58058B	6/29/18	11-2-303.8	Failure to notify. No survey.

NK Gas	Z4265	Antioch	A58363A	6/29/18	8-7-302.3	1)Failed district source test #18141 2)CAS Missing Air breather/lock on ball valve as required
NK Gas	Z4265	Antioch	A58363B	6/29/18	8-7-302.2	1)Failed district source test #18141 2)CAS Missing Air breather/lock on ball valve as required
Phillips 66 Carbon Plant	A0022	Rodeo	A57713A	6/7/18	2-6-307	Emissions not abated by baghouse A-4
Pittsburg Shell	Z4465	Bay Point	A58337A	6/27/18	8-7-302.1	Uncertified breakaway/not factory VST rebuilt
Shell Martinez Refinery	A0011	Martinez	A57595A	6/14/18	9-1-307	E07G29 SO2 >250 ppm
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A58278A	6/1/18	9-1-309	SO2 > 300ppm @ 12% O2. RCA #07F60
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A58279A	6/1/18	2-6-307	Nox > 60ppm @ 3% O2 / 8hr avg. RCA #07F72
Tesoro Refining & Marketing Company LLC	B2758	Martinez	A58280A	6/28/18	9-1-307	SO2 >250 ppm @0% O2. RCA 07G05
Top Food and Gas	Z4346	Hilltop Mall	A58306A	6/19/18	8-7-301	Failed Source Test: Torque (#18119), drop tube (#18120), static pressure (#18121)
Top Food and Gas	Z4346	Hilltop Mall	A58306B	6/19/18	8-7-302.5	Failed Source Test: Torque (#18119), drop tube (#18120), static pressure (#18121)
Unocal #2705704	V4180	Bay Point	A58336A	6/26/18	2-1-307	Surpass permitted through put limit of 1.13M
Weitekamp Remodeling & Construction	Z4438	Antioch	A55934A	6/25/18	11-2-401.3	10 day notification not met.

Marin

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Novato Builders Supply	Z4467	Novato	A58364A	6/29/18	8-7-301.1	2" gauge port is hooked up in place of pre-EVR fill adapter & cap
Skywalker Properties	Z4466	Nicasio	A58243A	6/27/18	2-1-307	Missed annual source test in 2016.

Napa

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Flyers	Z4470	Napa	A58361A	6/27/18	2-1-307	Condition #23223 Incomplete test in 2016 for vapor to liquid & ISD operability.
Napa Jet Center	B1900	Napa	A58358A	6/12/18	2-1-307	Static pressure performance test not completed in 2017. Above grnd tank product fill cap not install
Napa Jet Center	B1900	Napa	A58358B	6/12/18	8-7-301.2	Static pressure performance test not completed in 2017. Above grnd tank product fill cap not install
Napa Valley Country Club	C0359	Napa	A58307A	6/27/18	2-1-307	Failure to conduct annual source test. P/C #16516
Redwood Auto Service 76	Z4418	Napa	A58335A	6/20/18	8-7-302.3	Vapor pressure valve not operating as specified by CARB.

San Francisco

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Ace Drilling & Excavation	R3799	San Francisco	A58479A	6/28/18	11-2-401.3	Failure to notify.

Azul Works Inc.	W2615	San Francisco	A58480A	6/28/18	11-2-401.5	Failure to revise completion date.
Central Concrete Supply Inc	B2124	San Francisco	A57563A	6/26/18	2-1-307	Failed to conduct annual source test (PC# 1829-14)
Central Concrete Supply Inc	B2124	San Francisco	A57565A	6/26/18	2-1-307	Failed to conduct annual source test (PC#1829-14)
Central Concrete Supply Inc	B2124	San Francisco	A57566A	6/26/18	2-1-307	Failed to conduct annual source test (PC# 1829-14)
Romkon, Inc.	H9084	San Francisco	A56901A	6/20/18	11-2-401.3	Failure to notify, no survey.
Romkon, Inc.	H9084	San Francisco	A56901B	6/20/18	11-2-303.8	Failure to notify, no survey.

San Mateo

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Gimbal's Fine Candies Inc	E0267	South San Francisco	A56523A	6/1/18	2-1-307	Coating exceeded 5 tons per yr & 3.5lb/gal. Pressure drop exceeded on baghouse.
Gimbal's Fine Candies Inc	E0267	South San Francisco	A56523B	6/1/18	8-4-302	Coating exceeded 5 tons per yr & 3.5lb/gal. Pressure drop exceeded on baghouse.
Gimbal's Fine Candies Inc	E0267	South San Francisco	A56524A	6/6/18	2-1-307	Failure to meet permit conditions.
Reliance Construction	N4905	Burlingame	A58041A	6/15/18	11-2-401.5	Inaccurate start date.

Santa Clara

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Alliance Environmental Group	Y8752	San Jose	A56902A	6/21/18	11-2-401.5	Inaccurate start date.
City of San Jose (Singleton Road Landfill)	A4175	San Jose	A55713A	6/21/18	8-34-411	17 CCR & annual report late submission.
City of San Jose (Singleton Road Landfill)	A4175	San Jose	A55713B	6/21/18	CCR	17 CCR & annual report late submission.
Joseph J. Albanese	R1659	Santa Clara	A56900A	6/15/18	11-2-401.5	Inaccurate start date
JTC Construction & Management	Z4435	San Jose	A58406A	6/25/18	11-2-401.5	Failure to revise.

Solano

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Exxon	Z4410	Vallejo	A58634A	6/19/18	2-1-301	No current PO. Incomplete application, unpaid fees.
Exxon	Z4410	Vallejo	A58634B	6/19/18	2-1-302	No current PO. Incomplete application, unpaid fees.
Exxon	Z4410	Vallejo	A58636A	6/19/18	8-7-301.2	Uncertified OPW PV valve on vent pipe.
Steve Harder	Z3571	Fairfield	A58054A	6/19/18	11-2-401.5	Inaccurate start date.
W Texas Valero	Z4456	Fairfield	A58362A	6/28/18	2-1-307	Gasoline throughput exceedance: 8/2017-6/27/18. Permit condition: 100013

Yelton Co Inc	Z4434	Vacaville	A58057A	6/26/18	11-2-401.5	Work continues past completion date
CA Dept of Forestry	Z4419	Santa Rosa	A58241A	6/20/18	2-1-307	No current static pressure test.
Oak Mont	Z4385	Santa Rosa	A58334A	6/14/18	8-7-301.2	Failure to comply with NTC A46727
Oak Mont	Z4385	Santa Rosa	A58334B	6/14/18	8-7-503.2	Failure to comply with NTC A46727

District Wide

Site Name	Site #	City	NOV #	Issuance Date	Regulation	Comments
Safeway Inc	Z4398	Phoenix	A58305A	6/18/18	8-7-301.5	No rotation on 91 UNL fill adapter
Central Valley Demolition	W1803	Modesto	A58055A	6/19/18	11-2-401.3	Failure to notify.

SETTLEMENTS FOR $10,000 OR MORE REACHED

There were 2 settlement(s) for $10,000 or more completed in June 2018.

1) On June 11, 2018, the District reached settlement with Air Liquide Large Industries U.S. LP for $16,000, regarding the allegations contained in the following 3 Notices of Violation:

NOV #	Issuance Date	Occurrence Date	Regulation	Comments from Enforcement
A53850A	3/4/16	5/21/15	1-522.4	Dev 4236, 4237 & 4328, SO2 CEM giving unreliable SO2 readings
A56353A	6/23/16	9/4/15	2-6-307	Exceeded P/C 23179 limits for CO. Deviation 4313.
A56407A	2/9/17	8/11/16	2-6-307	CO concentration excess for 1 hour. RCA 07A06.

2) On June 25, 2018, the District reached settlement with Timberline Engineering, LLC for $17,000, regarding the allegations contained in the following 3 Notices of Violation:

NOV #	Issuance Date	Occurrence Date	Regulation	Comments from Enforcement
A55645A	11/28/17	11/3/17	11-2-303	Sections 303.3, 303.8, 303.9
A55645B	11/28/17	11/3/17	11-2-304	Sections 304.1
A55646A	11/28/17	11/3/17	11-2-401	Sections 401.3, 401.5

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 3, 2018

Re: Report of the Technology Implementation Office Steering Committee

RECOMMENDED ACTION

The Technology Implementation Office Steering Committee (Committee) received only informational items and has no recommendations of approval by the Board of Directors.

BACKGROUND

The Committee met on Thursday, June 21, 2018, and received the following reports:

A) Clean Cars for All: New Incentives Program for Low Income Consumers;

B) Mission and Customer Discovery;

C) Proposed Loan Relationship; and

D) Update on Technology Assessment Rules

Chairperson Cindy Chavez will provide an oral report of the Committee meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None. Funding for this contract comes from a $5M grant from the California Air Resources Board and is supported by the "California Climate Investments" (CCI) program;

B) None;

C) None; and

D) None

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Vanessa Johnson

Attachment 7A: 06/21/18 - Technology Implementation Office Steering Committee Agenda #4
Attachment 7B: 06/21/18 - Technology Implementation Office Steering Committee Agenda #5
Attachment 7C: 06/21/18 - Technology Implementation Office Steering Committee Agenda #6
Attachment 7D: 06/21/18 - Technology Implementation Office Steering Committee Agenda #7

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Cindy Chavez and Members
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: June 7, 2018

Re: Clean Cars for All: New Incentives Program for Low Income Consumers

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

In March 2018, the Air District and California Air Resources Board (CARB) finalized an agreement to implement the Clean Cars for All Program in the Bay Area. Clean Cars for All provides incentives for low income households (up to 400% of the Federal Poverty Level) in disadvantaged communities to retire older, high-polluting vehicles and replace them with a newer, cleaner vehicle or with alternative transportation options (e.g. Clipper card). Eligible vehicles for purchase or lease include hybrid electric, plug-in hybrid, or electric vehicles.

By replacing older, higher-emitting vehicles and replacing them with cleaner cars or alternative transportation options, this program will reduce criteria pollutants in disadvantaged communities throughout the Bay Area. Clean Cars for All also supports the Bay Area and California's goals for reductions in greenhouse gas emission (80% below 1990 levels by 2050) and zero-and near-zero emission vehicle deployment (90% of the Bay Area passenger vehicles by 2050 and 5 million vehicles statewide by 2030).

The agreement with CARB provides $5M for the two-year program, 5% of which may be used to subcontract with third party entities to address issues associated with participation of low-income consumers in disadvantaged communities. Air District staff are setting up the program components that are needed to open the program to the public, including:

- application system and website
- case managers to support applicants through the application and incentive process
- partnerships with dealers, vehicle scrappers, and alternative transportation programs
- materials for stakeholder engagement and outreach to disadvantaged communities

DISCUSSION

The Air District issued a Request for Proposals (RFP) for Case Managers to support Clean Cars for All on April 3, 2018. The RFP provides up to $250,000 to provide one-on-one assistance and support to eligible consumers that apply to the Clean Cars for All Program. Two proposals were received by the May 17, 2018 deadline from GRID Alternatives and Opus Inspection, Inc. A panel of four Air District staff, from the Technology Implementation Office, Strategic Incentives Division and Community Engagement Office, and one community representative performed a thorough evaluation of proposals based on the criteria including Expertise, Approach, Cost, Conflicts of Interest, and whether the organization is a local or green business.

The panelists average scores are summarized in Table 1 below:

Table 1. Scoring of Proposals

Criteria	Total Points Possible	GRID Alternatives	Opus Inspection, Inc.
Expertise	30	24.2	21.6
Approach	30	24.4	18.6
Cost	30	25	17.8
Conflicts of Interests	5	4.4	5
Organization's Specialty Focus Area	5	2.5	0
Total points	100	80.5	63

GRID Alternatives received the highest combined score of 80.5 for their proposal. GRID alternatives, headquartered in Oakland, CA is the country's largest nonprofit providing clean energy solutions to low-income families. GRID has over 10 years of experience providing multilingual and multicultural case management support for various grant programs in the Bay Area. Panelists noted that the strengths of this proposal included expertise in working with low income consumers in disadvantaged communities in the Bay Area, a thoughtful approach that included anticipated challenges and mitigation strategies, and a cost proposal that included significant cost sharing.

A summary of this TIO Steering Committee meeting will be presented to the Executive Committee on July 23, 2018. At that time, staff will recommend GRID Alternatives to the Board of Directors for a contract not to exceed $250,000 to be case managers for Clean Cars for All in Fiscal Year Ending (FYE) 2019 and FYE 2020.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None. Funding for this contract comes from a $5M grant from the California Air Resources Board and is supported by the "California Climate Investments" (CCI) program.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Tin Le
Reviewed by: Ranyee Chiang

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Cindy Chavez and Members
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: June 7, 2018

Re: Mission and Customer Discovery

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

The Technology Implementation Office (TIO) mission is to accelerate climate action by cultivating partnerships between technology developers and customers and offering grants and loans for low-carbon technologies for the industrial and transportation sectors. Air District staff will provide updates on the customer discovery process, including the results of interviews with stationary facilities and potential financing partners.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Derrick Tang and Ranyee Chiang
Reviewed by: Damian Breen

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Cindy Chavez and Members
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: June 7, 2018

Re: Proposed Loan Relationship

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

Air District staff will provide an update on the new relationship being developed between the Air District and the California Infrastructure and Economic Development Bank (IBank). This prospective relationship would enable loans and loan guarantees to be offered to Bay Area stationary facilities through the IBank's existing processes. Air District staff will provide matchmaking and technical evaluations that expand the IBank's customer base and push implementation of eligible greenhouse gas reduction technologies. The Air District funding will leverage IBank monies in a ratio as high as 10 to 1 to execute selected projects.

The goal of the Air District-IBank loan relationship is to create a revolving loan fund so that as project implementers pay back their loans, funding can be reinvested in additional greenhouse gas technology projects. When Air District and IBank staff finalize all the terms of this relationship, they will be presented to the Executive Committee and Board for approval.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Derrick Tang and Ranyee Chiang
Reviewed by: Damian Breen

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Cindy Chavez and Members
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: June 7, 2018

Re: Update on Technology Assessment Results

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

The Technology Implementation Office has worked with other Air District Divisions and engaged a consultant to evaluate technology options for loan projects. The evaluation criteria include technology readiness, costs, technical and market barriers, and potential for emissions reductions. The product will be a matrix of technologies that the Air District can maintain and use to prioritize the technologies supported through the financing and collaboration program. Air District staff will share preliminary results of this study with the Steering Committee.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Derrick Tang and Ranyee Chiang
Reviewed by: Damian Breen

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 13, 2018

Re: Report of the Personnel Committee Meeting of July 12, 2018

RECOMMENDED ACTION

A) Consider Reappointment of the Incumbent to the Air District's Hearing Board; Conduct Interviews; and Consider Recommending Board of Directors' Approval of Candidates for Appointment to the Air District's Hearing Board

    1) Consider reappointment of the incumbent to the Air District's Hearing Board. Conduct interviews and consider recommending Board of Directors' approval of candidates for appointment to the Air District's Hearing Board.

BACKGROUND

The Committee met on Thursday, July 12, 2018, and received the following reports:

A) Consider Reappointment of the Incumbent to the Air District's Hearing Board; Conduct Interviews; and Consider Recommending Board of Directors' Approval of Candidates for Appointment to the Air District's Hearing Board

Chairperson Jim Spering will provide an oral report of the Committee meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Vanessa Johnson

Attachment 8A: 07/12/18 – Personnel Committee Agenda #3

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Jim Spering and Members
of the Personnel Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 2, 2018

Re: Consider Reappointment of the Incumbent to the Air District's Hearing Board; Conduct Interviews; and Consider Recommending Board of Directors Approval of Candidates for Appointment to the Air District's Hearing Board

RECOMMENDED ACTION

Consider reappointment of the incumbent to the Air District's Hearing Board. Conduct interviews and consider recommending Board of Directors approval of candidates for appointment to the Air District's Hearing Board.

BACKGROUND

Pursuant to Section 40800 of the California Health and Safety Code, the Air District is required to maintain a Hearing Board consisting of five members including, one member who is a professional engineer registered as such pursuant to the Professional Engineers Act (Chapter 7 (commencing with Section 6700) of Division 3 of the Business and Professions Code), one member from the medical profession whose specialized skills, training, or interests are in the fields of environmental medicine, community medicine, or occupational/toxicologic medicine, one member admitted to the practice of law in this state, and two public members. The Air District Board of Directors may also appoint one alternate for each member. The alternate shall have the same qualifications, specified in Section 40801, as the member for whom such person is the alternate. The alternate may serve only in the absence of the member, and for the same term as the member.

Pursuant to Division I, Section 8.6 of the Air District's Administrative Code, Hearing Board Member terms are limited to fifteen (15) consecutive years, with reappointment possible after a three-year absence.

DISCUSSION

The terms of office for the incumbent in the Attorney (Principal) category will expire on July 28, 2018. Staff is recommending the reappointment of Ms. Valerie Armento, the current Chair of the Hearing Board.

On December 18, 2017, the Board of Directors appointed an alternate member in the Professional Engineer category to a principal position. As a result, there is one vacancy in the alternate position. Staff initiated a recruitment effort to fill the position.

After extensive recruitment and outreach efforts, staff received a total of four applications. Staff have assessed the candidates' experience and education relative to the position for which the candidates applied and have selected the top two candidates with the most relevant qualifications to interview with the Personnel Committee.

Interviews of the candidates will occur during the Personnel Committee meeting of July 12, 2018. The length of each interview will be approximately 15 minutes. The application materials of the candidates will be provided to you for your review.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Raegan Carmon
Reviewed by: Rex Sanders

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 23, 2018

Re: Report of the Advisory Council Meeting of July 19, 2018

RECOMMENDED ACTION

The Advisory Council (Council) considered the following items:

A) Introduction of New Members to the Air District's Advisory Council

1) None; receive and file.

B) Update on Assembly Bill 617 (AB 617)

1) None; receive and file.

C) Health Impacts and Assessments of Diesel Particulate Matter in the Bay Area

1) None; receive and file.

D) Update on the Air District's Diesel Particulate Matter Emissions Reduction Strategy

1) Consider providing input to the Air District Board of Directors in support of voluntary diesel emissions reduction efforts.

BACKGROUND

The Council met on Thursday, July 19, 2018 and received the following reports:

A) Introduction of New Members to the Air District's Advisory Council;

B) Update on Assembly Bill 617 (AB 617);

C) Health Impacts and Assessments of Diesel Particulate Matter in the Bay Area; and

D) Update on the Air District's Diesel Particulate Matter Emissions Reduction Strategy

Board Liaison, Rod Sinks, will provide an oral report of the Council meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None;

B) None;

C) None; and

D) None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Vanessa Johnson

Attachment 9A: 07/19/18 – Advisory Council Meeting Agenda #4
Attachment 9B: 07/19/18 – Advisory Council Meeting Agenda #5
Attachment 9C: 07/19/18 – Advisory Council Meeting Agenda #6
Attachment 9D: 07/19/18 – Advisory Council Meeting Agenda #7

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Stan Hayes and Members of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 9, 2018

Re: Introduction of New Members to the Air District's Advisory Council

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

Senate Bill 1415 (SB 1415), effective July 1, 2015, reconstituted the membership of the Bay Area Air Quality Management District (Air District) Advisory Council to include seven appointed members "skilled and experienced in the fields of air pollution, climate change, or the health impacts of air pollution. Members shall be selected to include a diversity of perspectives, expertise and backgrounds." The Council is "to advise and consult with the bay district board and the bay district air pollution control officer in effectuating the purposes of" the Air District.

MEMBERSHIP

At its May 7, 2018 meeting the Personnel Committee recommended, and the Board subsequently approved the appointment of Gina M. Solomon, M.D., M.P.H., and Linda Rudolph, M.D., M.P.H., to the Council for a two-year term.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Stan Hayes and Members of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 9, 2018

Re: Update on Assembly Bill 617 (AB 617)

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

The Advisory Council has been previously informed of Assembly Bill 617. The California Legislature passed, and Governor Jerry Brown signed, a number of key legislative actions that included AB 617. This bill specifically addresses concerns about local air quality by requiring:

- Emission reduction plans for overburdened communities;
- Additional air monitoring in impacted communities;
- A state-wide clearing house for Best Available Retrofit Control Technology (BARCT);
- Adoption of rules requiring the latest BARCT for all criteria pollutants for which an area has not achieved attainment of California Ambient Air Quality Standards; and
- Uniform state-wide reporting of emissions inventories.

DISCUSSION

Staff last updated the Advisory Council in March of this year. Staff will describe early progress regarding AB 617 implementation, including discussions with the California Air Resources Board and how this moves the Air District's program beyond the target of attainment for criteria pollutants.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Stan Hayes and Members
of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 9, 2018

Re: Health Impacts and Assessments of Diesel Particulate Matter in the Bay Area

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

Diesel particulate matter (diesel PM) remains a significant contributor to health impacts from air pollution in the Bay Area, especially for disadvantaged communities living near freeways and industrial areas.

DISCUSSION

Diesel PM consists of over 40 known toxic air contaminants and has been classified as a potent carcinogen by CalEPA's Office of Environmental Health Hazard Assessment. Health studies show that exposure to fine PM (with diameter less than 2.5 micrometers, $PM_{2.5}$), including diesel PM, is associated with an increased risk of cardiovascular and respiratory disease. In the Bay Area, areas with the highest cumulative impact from air pollution were identified through regional modeling and other studies conducted under the Air District's Community Air Risk Evaluation (CARE) program to focus agency resources in these areas. Staff will summarize the health impacts from exposures to diesel PM and present regional and local analyses and measurement studies that further our understanding of diesel PM emissions and exposures in the Bay Area. Such studies show that diesel PM contributes about 65% of the regional cancer risk from air pollution and about 15% of regional $PM_{2.5}$.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Phil Martien
Reviewed by: Jeff McKay and Greg Nudd

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Stan Hayes and Members of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 9, 2018

Re: Update on the Air District's Diesel Particulate Matter Emissions Reduction Strategy

RECOMMENDED ACTION

The Advisory Council will consider providing input to the Air District Board of Directors in support of voluntary diesel emissions reduction efforts.

BACKGROUND

Several Air District initiatives including the Community Air Risk Reduction (CARE), Community Health Protection, Mobile Source, regulatory and permitting programs have identified diesel particulate matter (diesel PM) as being a significant concern relative to climate, air quality and public health. To address this pollutant, the Air District has devised a multilayered approach to reducing and eliminating diesel PM from Bay Area industries and communities.

DISCUSSION

At the previous Advisory Council meeting, Air District staff discussed a focus on aggressively curbing diesel transport emissions in Bay Area communities, and sought concurrence on a process to evaluate and possibly implement a variety of strategies, including strategies that use incentives and other non-regulatory methods.

As part of this agenda item, staff will update the Council on the scope of the Air District's current diesel emissions reductions program and will seek advice and direction on additional areas of focus that should be considered.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Damian Breen
Reviewed by: Jeff McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 23, 2018

Re: Report of the Executive Committee Meeting of July 23, 2018

RECOMMENDED ACTION

The Executive Committee (Committee) recommends Board of Directors' approval of the following items:

A) Hearing Board Quarterly Report: April – June 2018

1) None; receive and file.

B) Recommended Assembly Bill (AB) 617 Communities for Community Plans

1) Recommend Board of Directors approve staff recommendation for community air monitoring and community emission reduction plans under the state's Community Air Protection Program.

C) Update on the Governor's Global Climate Action Summit

1) Seek support from their jurisdictions for the Diesel Free by '33 Statement of Purpose and encourage signatures from Mayor's both within and outside the Bay Area; and

2) Encourage participation from cities, counties and business Request at the Climate Technology Showcase event.

D) Technology Implementation Office Update and Summary of Steering Committee Meeting

1) Authorize the Executive Officer/APCO to negotiate and execute an agreement with the IBank not to exceed $4,185,000 to fund a loan program for Bay Area industrial facilities.

E) Status Update on the Air District's Advisory Council

1) None; receive and file.

F) Amendments to the Air District Administrative Code Addressing Resolutions

1) Recommend Board of Directors consideration and approval of language amending the Air District's Administrative Code to address introduction and amendment of resolutions to be adopted by the Board of Directors. If approved by the Committee, in accordance with the Air District's Administrative Code, language amending the Administrative Code will be noticed in an upcoming Board of Directors meeting agenda, and placed on the Agenda for adoption at a subsequent meeting.

G) Discussion of Procedures for Receiving Public Comment on Non-Agenda Topics

1) Discuss procedures for receiving public comment on topics not included in an item on a posted agenda.

BACKGROUND

The Committee met on Monday, July 23, 2018, and received the following reports:

A) Hearing Board Quarterly Report: April – June 2018;

B) Recommended Assembly (AB) 617 Communities for Community Plans;

C) Update on the Governor's Global Climate Action Summit;

D) Technology Implementation Office Update and Summary of Steering Committee Meeting;

E) Status Update on the Air District's Advisory Council;

F) Amendments to the Air District Administrative Code Addressing Resolutions; and

G) Discussion of Procedures for Receiving Public Comment on Non-Agenda Topics

Chairperson David Hudson will provide an oral report of the Committee meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None;

B) None. Funding for year 1 of this program has been included in the Fiscal Year Ending (FYE) 2019 Budget;

C) None;

D) None. Funding for the IBank agreement is part of the Board approved Fiscal Year Ending (FYE) 2019 budget;

E) None;

F) None; and

G) None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Vanessa Johnson

Attachment 10A: 07/23/18 – Executive Committee Meeting Agenda #3
Attachment 10B: 07/23/18 – Executive Committee Meeting Agenda #4
Attachment 10C: 07/23/18 – Executive Committee Meeting Agenda #5
Attachment 10D: 07/23/18 – Executive Committee Meeting Agenda #6
Attachment 10E: 07/23/18 – Executive Committee Meeting Agenda #7
Attachment 10F: 07/23/18 – Executive Committee Meeting Agenda #8
Attachment 10G: 07/23/18 – Executive Committee Meeting Agenda #9

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Executive Committee

From: Chairperson Valerie J. Armento, Esq., and Members of the Hearing Board

Date: July 9, 2018

Re: Hearing Board Quarterly Report: April – June 2018

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

During the second calendar quarter of 2018 (April - June), the Hearing Board:

- Held no hearings;
- Processed a total of four orders; and
- Collected a total of $4,602.00 in filing fees.

Below is a detail of Hearing Board activity during the same period:

Location: Solano County; City of Suisun City

Docket: 3705 – Potrero Hills Landfill, Inc. – *Request for Short-Term Variance*

Regulation(s): Regulation 2, Rule 1, Section 301 (Permits, General Requirements, Authority to Construct)

Synopsis: The Potrero Hills Landfill (PHLF) is a municipal solid waste landfill equipped with a landfill gas (LFG) collection and control system. The facility provides solid waste management services for the local communities, including collection, re-use, recycling, and disposal of municipal solid waste. The majority of the collected LFG is sent to a landfill gas to energy facility, which is permitted separately from the Landfill, in order to produce renewable energy. A Variance was sought for the central function of the site: To accept and place municipal solid waste and other waste material in the landfill. Curtailing operations would deprive the community of vital public services. In addition, PHLF would suffer substantial economic losses if forced to curtail landfilling operations. An application for a landfill expansion at the PHLF was first submitted to the BAAQMD in 2004. Permitting was delayed for several years due to protracted legal challenges to Solano County's environmental approval of the project. These legal challenges were resolved in early 2014. Several applications updating the original application were submitted since the original 2004 application, with the most recent permit application (application # [AlN] 27654) submitted on November 11, 2015. The intent of that application was to update and replace the original 2004

application (AIN 11378). BAAQMD determined the updated application to be complete on July 25, 2016; however, the District had not yet issued a permit. A primary factor in the delayed completion of the permitting was staffing/workload constraints on permitting staff, a factor beyond the control of PHLF. PHLF initially expected an Authority to Construct (ATC) increasing the cumulative disposal limit, based on the updated application, to be issued by the end of 2016. In 2018, PHLF was rapidly approaching its current cumulative limit and expected to reach it by the end of March 2018. It was not feasible for PHLF to curtail operations, as it would deprive the community of vital public services. As such, a variance was needed to allow the landfill to continue landfilling operations.

Status: Applicant submitted an application for a short-term variance on March 22, 2018; Hearing scheduled for April 10. 2018; Applicant requested to withdraw application on April 3, 2018 due to negotiations with staff for a Compliance/Enforcement Agreement; Order for Dismissal filed on April 4, 2018.

Period of Variance Requested: March 21, 2018 to Issuance of Authority to Construct

Estimated Excess Emissions: 21.66 tons of fugitive Particle Oxidation Catalysts emissions/year

Fees collected this quarter: None

Location: Contra Costa County; City of Richmond

Docket: 3706 – Wholesome Harvest Bakery, a Division of Bimbo Bakeries USA – *Request for Interim and Regular Variances*

Regulation(s): Regulation 2, Rule 1, Section 307 (Permits – General Requirements - Failure to Meet Permit Conditions); and Regulation 8, Rule 42, Section 303 (Organic Compounds – Commercial Break Bakeries - Emission Control Requirements, Existing Ovens)

Synopsis: A variance was sought for the 98% destruction efficiency permit condition for the catalytic oxidizer (A 1) which reduces ethanol emissions from the bread and rolls baked in the two tunnel ovens (S-1 and S-2). The facility requested a variance to operate at current conditions (estimated at 95% destruction efficiency) for this catalytic oxidizer while the applicant prepared a permit modification for its planned replacement. The applicant will request a 95% destruction efficiency for the new catalytic oxidizer. The variance would allow the bakery to operate while the new oxidizer is purchased, permitted, installed and source tested.

Status: Application filed on May 21, 2018; interim and regular variance hearings scheduled back-to-back on July 10; applicant requested to withdraw application on June 11; Order for Dismissal filed on June 11, 2018.

Period of Variance Requested: June 1, 2018 to March 31, 2019

Estimated Excess Emissions: 4.3 lbs of ethanol per day before mitigation

Fees collected this quarter: $4,602.00

Location: San Mateo County, City of South San Francisco

Docket: 3707 - APCO vs. Gold Star Auto Body, LLC., et al – *Accusation*

Regulation(s): Regulation 2, Rule 1 (Permits, General Requirements)

Synopsis: Respondents have owned or operated a facility in South San Francisco, California, where they conduct auto body coating operations, for which they must hold a District permit to operate pursuant to District Regulation 2, Rule 1. District records indicate they have owned or operated the facility since at least 2007 and have not had a current or valid permit to operate the facility since April 1, 2010. The Air District alleged that despite Respondents' knowledge that they must hold a permit to conduct auto body coating operations, since at least April 1, 2010, they have continued to operate without one. Complainant sought an order that Respondents cease conducting operations until they obtain a District permit to do so.

Status: Accusation filed on May 29, 2018; hearing scheduled for July 17; Order for Dismissal filed on July 10, 2018 since facility obtained all required permits.

Location: Solano County, City of Vallejo

Docket: 3708 – APCO vs. Andy's BP Inc., et al - *Accusation*

Regulation(s): Regulation 2, Rule 1, Section 302 (Permit to Operate)

Synopsis: Respondents have owned or operated a gasoline dispensing facility in Vallejo, California, for which they must hold a District permit to operate pursuant to District Regulation 2, Rule 1. District records indicate they have owned or operated the facility since at least December 2011, but have not had a current or valid permit to operate the facility since March 1, 2014. The District is informed and believes and thereon alleges that Respondents know they must hold a permit to operate a gasoline dispensing facility, but that despite knowledge, they have been operating it without one since at least March 1,2014. Complainant sought an order that Respondents cease conducting operations unless and until they obtain a District permit to do so.

Status: Accusation filed on June 12, 2018; hearing scheduled for July 17, 2018; Order for Dismissal filed on June 27, 2018.

Respectfully submitted,

Valerie J. Armento, Esq.
Chair, Hearing Board

Prepared by: Marcy Hiratzka
Reviewed by: Vanessa Johnson

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 16, 2018

Re: Recommended Assembly Bill (AB) 617 Communities for Community Plans

RECOMMENDATION

Recommend Board of Directors approve staff recommendations for community air monitoring and community emission reduction plans under the state's Community Air Protection Program.

BACKGROUND

The Bay Area Air Quality Management District is required to prepare a "final submittal" for the California Air Resources Board (CARB) on recommended communities that will be our focus for development of community monitoring plans and community emission reduction plans for the first five years of the state's Community Air Protection Program. The Community Air Protection Program was established by the state to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statues of 2017), which directs the state, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans.

This will be the second list of communities the Air District has submitted to CARB for action under AB 617. The first submittal included all communities that the Air District believes will benefit from AB 617 and associated incentive funding. This smaller list will be the communities for which we plan to develop community-specific plans for the first five years of the program. All the communities on the initial list will be eligible for the incentive funding.

This list of high priority communities for monitoring plans and emission reduction plans will be revisited and re-submitted to CARB every year. The CARB board makes the final decision about which communities will be selected for community plans for that year.

DISCUSSION

To develop this list of high priority communities for monitoring plans and emission reduction plans, Air District staff considered air quality and health data. Air quality data was obtained from the Air District's CARE Pollution Index and fine particulate matter and toxic air contaminant concentrations measured at San Francisco Bay Area monitoring sites. Health data was obtained from the CARE Vulnerability Index and the California Healthy Places Index developed by county

public health officials. Staff also considered community readiness, historical and on-going community exposure characterization work by communities, concentration of stationary sources, community input, and socio-economic factors and other public health data available via statewide screening tools. Final recommendations for prioritizing areas for action are due to the state on July 31, 2018.

Community air monitoring and emission reduction plans are one component of AB 617. Plans will include a substantial research and analytical component to better understand local emission sources. Therefore, they are needed in communities where there is significant uncertainty about how much various sources contribute to pollution exposure and/or where there is a significant mobile source component to the exposure. The use of the Air District's regulatory authority can be used to more quickly reduce exposures in communities where there are already well-known emission sources.

The staff's analysis and recommendation document were posted for public review and comment on July 5, 2018. The staff presentation will address any comments received from that public process.

Staff Community Recommendations

Year 1: West Oakland, Community Emission Reduction Plan
Air District staff recommends West Oakland for an emission reduction plan in year 1 of the state's AB 617 program. The West Oakland Environmental Indicators Project (WOEIP) will be our co-lead in this effort. They have a long history of community planning and advocacy to reduce residents' exposure to diesel particulate matter and toxic air contaminants. WOEIP has been instrumental in bringing air pollution and its related health effects to the forefront of research and planning activities in West Oakland. They are uniquely positioned to engage quickly and effectively in an action planning effort and will likely serve as a model in future plans.

Year 1: Richmond, Community Air Monitoring
Air District staff recommends the Richmond area for a community monitoring plan in year 1 of the state's AB 617 program. In Richmond, we have an opportunity to leverage many historic and current monitoring studies. The Richmond area includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. There are a complex mix of emission sources in the Richmond area. It is home to a large refinery and chemical plant, a seaport, organic waste and metal facilities, small to medium industrial and manufacturing facilities, high volume freeways and roadways, a railyard and rail lines. Our primary goal of the Richmond monitoring effort will be to better characterize this mix of sources and to more fully understand the associated air quality and pollution impacts.

Years 2-5 Communities
Air District staff recommends East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose and Vallejo for years 2-5 in the state's AB 617 program. Like Richmond and West Oakland, currently available data shows that these communities have higher levels of environmental exposures and more significant health burdens compared to the rest of the Bay Area.

These health burdens increase vulnerability to environmental exposures. Over the next several years, we will be working to build capacity in these communities for future planning and/or community air monitoring. Building partnerships and developing a shared understanding of local air quality issues, combined with lessons learned from the year 1 activities, will provide strong foundation for improving air quality in the years 2-5 communities.

Communities for Years 6 and Beyond
Our recommended communities for years 1 through 5 do not represent all Bay Area communities that have high levels of air pollution. We are committed to addressing air quality issues, and associated health impacts, in every Bay Area community burdened by air pollution. The Air District will use its permitting, monitoring, education, regulatory, enforcement and grants programs to improve air quality issues across the region.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None. Funding for year 1 of this program has been included in the Fiscal Year Ending (FYE) 2019 Budget.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Christianne Riviere
Reviewed by: Greg Nudd

Attachment 4A: Final Submittal: Public Process for Determination of Recommended Communities

San Francisco Bay Area Community Health Protection Program:
Improving Neighborhood Air Quality

Final Submittal: Public Process for Determination of Recommended Communities

August 1, 2018

Bay Area Air Quality Management District

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Attachments

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Executive Summary

The Bay Area Air Quality Management District is required to prepare a "final submittal" for the California Air Resources Board (CARB) on recommended communities for the first five years of the state's Community Air Protection Program. The Community Air Protection Program was established by the state to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statues of 2017), which directs the state, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans.

Bay Area residents helped Air District staff select all candidate communities, and final recommended communities for years 1 through 5. Since January 2018, residents attended numerous workshops and used online engagement tools to share local air quality concerns and to propose communities for action. Community recommendations, along with air quality and health data, helped us draft a complete set of areas in the Bay Area that would be good candidates for the development of an action and/or monitoring plan. All areas were sent to the California Air Resources Board on April 25, 2018.

To select year 1 through 5 communities, Air District staff considered air quality and health data. Air quality data was obtained from the Air District's CARE Pollution Index, and also fine particulate matter and toxic air contaminant concentrations measured at San Francisco Bay Area monitoring sites. Health data was obtained from the CARE Vulnerability Index and via life expectancy. We also considered community readiness, historical and on-going community and other monitoring or exposure efforts, concentration of stationary sources, community input, and socio-economic factors and other public health data available via statewide screening tools.

Year 1: West Oakland, Community Action Plan

The Air District recommends West Oakland for an action plan in year 1 of the state's AB 617 program. The West Oakland Environmental Indicators Project (WOEIP) will be our partner in this effort. They have a long history of community planning and advocacy to reduce residents' exposure to diesel particulate matter and toxic air contaminants. Maritime-freight industries, rail, large distribution centers, a cement plant, a power plant, metal facilities, small to medium industrial and manufacturing operations, major freeways and busy roadways used as trucking routes all impact the West Oakland community. These sources contribute to high levels of $PM_{2.5}$ concentrations and elevated cancer risk from toxic air contaminants. West Oakland is considered one of the most impacted areas in the San Francisco Bay Area due to the area's many sources of diesel particulate matter.

Year 1: Richmond, Community Air Monitoring Plan

The Air District recommends the Richmond area for a community monitoring plan in year 1 of the state's AB 617 program. In Richmond, we have an opportunity to leverage many historic and current monitoring studies. The Richmond area includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. There are a complex mix of emission sources in the Richmond area. It is home to a large refinery and chemical plant, a seaport, organic waste and metal facilities, small to medium industrial and manufacturing facilities, high volume freeways and roadways, a railyard and rail lines.

Years 2-5 Communities

The Air District recommends East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose and Vallejo for years 2-5 in the state's AB 617 program. Over the next several years, we will be working to build capacity in these communities for future planning and/or community air monitoring. Building partnerships and developing a shared understanding of local air quality issues, combined with lessons learned from the year 1 activities, will provide strong foundation for improving air quality and health in the years 2-5 communities.

Year 6+ Communities

The communities recommended for years 1 through 5 do not represent all Bay Area communities that have high levels of air pollution. The Air District is committed to addressing disproportionate impacts caused by air quality issues, and associated health outcomes, throughout the Bay Area. The Air District will use its permitting, monitoring, education, regulatory, enforcement, grants programs and all other available tools to address air quality issues across the region. This will allow us to improve health outcomes for everyone.

Introduction

This document serves as the as the Bay Area Air Quality Management District's (Air District's) final submittal on "recommended communities" for the first five years of the state's Community Air Protection Program, as required by the California Air Resources Board (CARB). The Community Air Protection Program was established by the state to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statues of 2017). AB 617 directs the state, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans

The Air District first initiated a comprehensive program to identify areas that experience regional disparities in air pollution exposure and health effects in 2004. Through the Community Air Risk Evaluation (CARE) program, the Air District identified areas in the San Francisco Bay Area where air pollution disparities are most significant and where populations are most vulnerable to air pollution.

The CARE program served as a starting point for the Air District's work in selecting "candidate communities" for CARB's Community Air Protection Program. On April 25, 2018, the Air District submitted candidate communities to CARB - communities in the San Francisco Bay Area that the Air District identified as having a high cumulative exposure burden. San Francisco Bay Area candidate communities included all the Air District's CARE areas, as well as areas with large sources of air pollution (refineries, seaports, airports, etc.), areas that have been identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas that have low life expectancy. [1]

To select recommended communities from all San Francisco Bay Area candidate communities, the Air District considered both air quality and health-based data. Air quality data was obtained from the Air District's CARE Pollution Index,[2] and also fine particulate matter ($PM_{2.5}$) and toxic air contaminant concentrations measured at San Francisco Bay Area monitoring sites. The CARE Pollution Index includes both modeled concentrations of cancer risk and fine particulate matter, as well as interpolated concentrations of ozone from monitoring sites. Health data was obtained from the CARE Vulnerability Index[3] and life expectancy. The CARE Vulnerability Index includes mortality rates, costs from ER visits and hospitalizations for illnesses aggravated by air pollution. Life expectancy was considered as a public health indicator. We also considered community capacity (community resources and capacity to immediately participate in AB 617), historical and on-going community monitoring efforts or exposure characterization work by communities, concentration of stationary sources, community input, and socio-economic factors and other public health data available via statewide screening tools.[4]

Below are the enumerated responses to the specific questions listed in CARB's *Community Protection Program Draft Process and Criteria for 2018 Community Selections*.[5] Specifically, included is a description of the Air District's recommended communities, early work in communities, required resources,

[1] See Attachment A for a map of all Air District "high cumulative exposure burden" areas.
[2] See Attachment B for CARE Pollution Index map
[3] See Attachment C for CARE Vulnerability Index map
[4] See Attachment D for full methodology description.
[5] Full questions are listed in Attachment E; CARB document available here: https://ww2.arb.ca.gov/sites/default/files/2018-02/capp_draft_process_and_criteria_for_2018_community_selection_february_2018.pdf

availability of data to prepare community-level emission inventories and the public process used to identify, and then prioritize and select, recommended communities.

1. Description of Year 1 Communities

The Air District recommends West Oakland and the Richmond area as the San Francisco Bay Area's year 1 communities for the state's Community Air Protection Program. We recommend West Oakland for a community emission reduction program (action plan) and the Richmond area for a community air monitoring plan.

Figure 1. SF Bay Area, Year 1 Communities, Years 2-5 Communities

West Oakland: Community Emissions Reduction Program

The residential area of West Oakland is generally bounded by the Port of Oakland, the Union Pacific rail yard, and I-580, I-880 and I-980 freeways. Specific geography for the study area will be determined in partnership with the community, i.e. in conjunction with the Community Steering Committee, which will be established as part of the emission reduction program. The study area geography will include the numerous sources that impact West Oakland.

Maritime-freight industries (including the Port of Oakland, the redevelopment of the Oakland Army Base and private facilities), the rail yard and rail lines, large distribution centers, a cement plant, a power plant, metal facilities, small to medium industrial and manufacturing operations, major freeways and busy roadways used as trucking routes all impact the West Oakland community. These sources contribute to high levels of $PM_{2.5}$ concentrations and elevated cancer risk from toxic air contaminants. West Oakland is considered one of the most impacted areas in the San Francisco Bay Area due to the area's many sources of diesel particulate matter. Unknown additional impacts may occur due to the redevelopment of the Oakland Army Base.

Approximately 25,000 people live in the West Oakland area. Nearly 30 percent of the population is African-American and over 25 percent is Latino. [6] West Oakland is predominantly a low-income and high health-burden community. It is a designated CARE area, has high levels of environmental exposures and experiences social and economic disadvantages. Health burdens that increase vulnerability to environmental exposures are widespread in the West Oakland community. People living in West Oakland experience more asthma emergency room visits, higher rates of cardiovascular disease, greater unemployment, lower educational attainment, higher housing cost burden, lower life expectancy and higher incidences of poverty than most other areas in Alameda County.

[6] U.S. Census Bureau, 2010 Census.

The Air District, the West Oakland Environmental Indicators Project and other community groups and researchers have spent decades doing monitoring, modeling and planning related work to better understand and address the community's exposure to air pollution.[7] The body of knowledge and experience of the West Oakland community, as well as the established relationship between the Air District and West Oakland Environmental Indicators Project positions West Oakland as a community most likely to succeed in developing a robust community emission reduction plan given the challenging legislative deadlines. West Oakland Environmental Indicators Project has been instrumental in bringing air pollution and its related health effects to the forefront of research and planning activities in West Oakland. The Indicators Project is uniquely positioned to engage quickly and effectively in an action planning effort that will serve as a model for future action plans.

Richmond: Community Air Monitoring Plan

For the purposes of this submittal, the Richmond area includes the City of Richmond, areas in El Cerrito just south of Richmond, and communities just north and east of Richmond, including portions of San Pablo and several unincorporated communities, such as North Richmond. The specific geography for the study area and the monitoring objectives will be determined in partnership with the community, i.e. in conjunction with the Community Stakeholder Group, which will be established as part of the community air monitoring planning process.

In the Richmond area, which is also a designated CARE area, there is a complex mix of emission sources: a large refinery and chemical plant, a petroleum coke terminal, organic liquid storage and distribution facilities, a seaport, organic waste and metal facilities, small to medium industrial and manufacturing sources, high volume freeways and roadways, a rail yard and rail lines.

Approximately 100,000 people live in the Richmond area.[8] A variety of communities and neighborhoods make up the Richmond area. Neighborhoods range from 16 to over 33 percent African American; and from 40 to over 56 percent Latino. Many of these areas are low-income and have high health burden that increase vulnerability to environmental exposures. Areas throughout Richmond also experience social or economic disadvantages. People living in the Richmond area, especially North Richmond and the Iron Triangle, experience more asthma emergency room visits, higher rates of cardiovascular disease, greater unemployment, lower educational attainment, higher housing cost burden, lower life expectancy and higher incidences of poverty than in other areas of Contra Costa County.

There are several ongoing monitoring and air quality research projects in the Richmond area. Projects include the expansion of monitoring efforts in Richmond due to the Air District's Regulation 12, Rule 15 (Petroleum Refining Emissions Tracking), a community monitoring project through an EPA STAR grant in which the Air District is partnering with the South Coast Air Quality Management District to build a low-cost sensor guidance document, an air toxics data analysis effort with the City of Richmond through an EPA Community-Scale Air Toxics Monitoring Grant, and other studies by researches or other government agencies. These projects and studies can be leveraged and will allow a year 1 monitoring plan in Richmond to be more feasible in the legislatively required timeframe. These efforts will also help inform and improve the monitoring efforts in the area, for data collected by all the various project can be comprehensively reviewed and analyzed and any findings leveraged. The Air District also expects to work with other groups funded by CARB or other organizations to assist with any ongoing monitoring

[7] More information about these projects is listed in the Air District response to item 3, *Work Already Started*.
[8] U.S. Census Bureau, 2010 Census.

efforts, including ensuring the work is transparent to the public. (More information about these projects is provided below.)

2. Description of Years 2-5 and Year 6+ Communities

Years 2-5 Communities

The Air District recommends East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose and Vallejo as the San Francisco Bay Area's years 2-5 communities for the state's Community Air Protection Program. These communities rose to the top of many of the air quality and health metrics evaluated by the Air District. The Air District will continue to develop more refined and accurate data on health vulnerability and air pollution exposure. Recommendations for years 2-5 will be re-evaluated each year, as new data to better understand community air quality concerns become available.

East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose and Vallejo include numerous high health-burden neighborhoods with disproportionately high exposure to air pollution. Many people living in the years 2-5 areas experience more asthma emergency room visits, higher rates of cardiovascular disease, greater unemployment, lower educational attainment, high housing cost burden, lower life expectancy and higher incidences of poverty than other areas of the San Francisco Bay Area.

Table 1 lists the significant stationary and mobile sources of pollution in each of the years 2-5 communities.

Table 1. Emission Sources

Community Area	Stationary Sources	Mobile Sources
East Oakland/San Leandro	Waste facilities, metal facilities, crematory, small to medium industrial and manufacturing operations.	Oakland International Airport, large distribution centers, high-volume freeways and roadways (I-880, I-238, I-580, Highway 92), trucks, transit buses, industrial equipment, freight and passenger rail
Eastern San Francisco	Organics recovery and waste facilities, power plants, and numerous small to medium industrial and manufacturing operations	High-volume freeways and roadways (I-280, I-80, Bay Bridge, Highway 101), trucks, industrial equipment, transit buses, harbor craft, freight and passenger rail, construction equipment
Pittsburg-Bay Point Area	Power plants, chemical plant, landfills, metal and chrome plating facilities, agriculture equipment	Freight rail, high-volume freeways and roadways (Highway 4, Highway 160), industrial equipment, transit buses, harbor craft, ocean going vessels
San Jose	Organics and waste recovery facilities, organic liquids storage and distribution facilities, quarries, cement and asphalt plants and small	San Jose International Airport, freight and passenger rail, high volume freeways and roadways (I-880, I-280, I-680, Highway 101, Highway 87),

	to medium industrial and manufacturing operations	trucks, transit buses, industrial equipment distribution centers
Vallejo	Marine terminals, landfills, metal facilities, cement plant (potential)	Freight rail, high-volume freeways and roadways (I-80, Highway 29, Highway 37), trucks, industrial equipment, transit buses, harbor craft, ocean going vessels

Year 6+ Communities

The Air District identified high cumulative exposure burden areas, or candidate communities, in every county in the San Francisco Bay Area. Recommended year 1 and years 2-5 communities have been selected from these areas. Areas recommended for years 6+ are all the San Francisco Bay Area's candidate communities, not identified as a year 1 or years 2-5 community. Years 6+ communities are areas that were identified as having one or more of the following characteristics: within an Air District CARE area, has large sources of air pollution, has been identified via statewide screening tools as areas with pollution and/or health burden vulnerability, or has low life expectancy.

Years 6+ communities in the San Francisco Bay Area are mostly in the region's suburban or semi-rural areas, with some locations in the urban core. In general, communities identified as years 6+ have some level of environmental exposures and/or experience social or economic disadvantages. They may also have health burdens that increase vulnerability to environmental exposures, but to a lesser extent than those identified above. In general, Years 6+ communities may experience higher levels of exposure areas air pollutants, suffer from more air quality related health impacts and higher incidences of poverty than those identified above.

3. Information for Recommended Communities

Work Already Started

The Air District has a long history of working in and with communities to reduce people's exposure to harmful emissions. For over 60 years, the Air District has been passing regulations on large facilities, small to medium industrial sources, diesel engines, fireplaces and many other sources to reduce local exposure to air pollutants. Permitting and enforcement of our regulations ensures exposure reductions are realized. Our monitoring work, including fence-line and other source-oriented monitors, near-roadway monitors and regional fixed-site monitors allow Air District staff to assess and better understand regional and local air pollutant levels. Incentive programs enable the Air District to further reduce emissions and pollutant exposure from the sources we cannot regulate. Trucks, vehicles, locomotives, ships and industrial and construction equipment are often the most significant sources of pollution in our most impacted communities. The CARE program, initiated in 2004, served as the Air District's foundation for identifying and selecting communities most impacted by and vulnerable to health impacts from air pollution for the AB 617 effort.

AB 617 presents an opportunity to continue and expand these programs - to ensure that exposure to air pollutants is reduced in our most impacted communities. Through AB 617, we will build community capacity to better understand the impacts of poor air quality and participate in the AB 617 process. We will build better partnerships, engagement strategies and educational materials to ensure a shared

understanding of air quality and related community health. The specific work we are doing in West Oakland and Richmond, and how our work impacts all AB 617 communities is described below.

Year 1 Communities: West Oakland and Richmond

The Air District has been working directly with our recommended year 1 communities to support the development of a community emission reduction program in West Oakland and a community air monitoring plan in Richmond. Our work in West Oakland continues the partnerships we have had with the West Oakland community, especially with the West Oakland Environmental Indicators Project, for well over a decade. It also builds on over thirty years of planning activities. Early plans focused on economic revitalization and transportation access, often addressing specific areas or neighborhoods in West Oakland, such as Seventh Street, the Mandela Parkway, or Acorn-Prescott. Over the past fifteen years, various planning activities have sought to bring jobs, retail and services to the community; to address incompatible land uses; to improve transit, bike, and pedestrian access; to increase mixed-use development; to preserve the existing housing stock; to increase the supply of affordable housing; and to reduce the community's exposure to diesel particulate matter and toxic air contaminants.

West Oakland's exposure to diesel particulate matter and toxic air contaminants, and corresponding health burden has been extensively studied. Beginning with a partnership with the Pacific Institute in 2000, the West Oakland Environmental Indicators Project has been instrumental in bringing air pollution and its related health effects to the forefront of research and planning activities in West Oakland. West Oakland Environmental Indicators Project has led or participated in the following studies: *Neighborhood Knowledge for Change: The West Oakland Environmental Indicators Project (2002)*, *Cleaning the Air: Reducing Diesel Pollution in West Oakland* (2003), *Paying with Our Health: The Real Cost of Freight Transport in California* (2006), and the *West Oakland Truck Survey* (2009). In addition, West Oakland Environmental Indicators Project co-chaired the Port of Oakland's 2009 Maritime Air Improvement Plan (MAQIP) and the MAQIP update currently underway. They were an active member of the West Oakland Specific Plan (2014) working group and continue to participate in the Oakland Army Base Stakeholder Group.

These partnerships have also helped to expedite investments to early-retire highly polluting mobile sources impacting the West Oakland community. Between 2008 and 2016 the Air District awarded over $33 million in grants to retrofit or replace approximately 2000 diesel trucks that move goods from Port of Oakland. During this time, the Air District also awarded more than $24 million to install shore power infrastructure to reduce pollution from ocean-going vessels at the Port of Oakland. These investments, along with ARB air toxic control measures for mobile sources, have helped significantly reduce diesel emissions in West Oakland, and the region. Since 2016, the Air District awarded more than $10 million to additional projects to reduce emissions from locomotives, cargo-handling equipment, marine vessels, and on-road trucks. These projects will reduce more than 84 tons of NOx, 2.7 tons of ROG, and 1.4 tons of diesel PM per year.

Despite this extensive history of planning, research, and grant-funding activities in West Oakland, more work needs to be done. We need to integrate the findings of past studies and implement measures that reduce criteria air pollutants and toxic air contaminants emissions and exposure to improve health outcomes. To this end, the West Oakland Environmental Indicators Project and the Air District have recently developed a formal partnership to develop a community emission reduction action program for the West Oakland community. We worked together to identify local stakeholders and community

members to participate on a steering committee to guide the development of the action plan. The steering committee has formed and has begun meeting.

In the Richmond area, Air District staff is working to establish a group of strong local, community-based organizations to partner with the Air District in leading the effort to develop the community air monitoring plan. We are beginning by building a "bench" of community partners that can bring various skills, knowledge, and capabilities to the partnership. We expect to have community partners on board by late Summer 2018. In parallel, we are preparing a technical assessment and information report for the Richmond area, to share with community partners for their input. We will also work with our community partners to identify local stakeholders and other community members to form a larger stakeholder group.

There are several air monitoring and air quality data analysis efforts ongoing in Richmond. These efforts can be leveraged to ensure the Richmond community air monitoring plan is feasible and successful in the short state-mandated time frame. One such effort is the expansion of the fence-line monitoring systems to include all Bay Area refineries, including expansion of the current system at the Chevron Refinery. Chevron has proposed to expand its fence-line monitoring system to meet the requirements of the Air District's Regulation 12, Rule 15 (Rule 12-15). Additionally, as part of the Rule 12-15 process, the Air District committed to expand efforts to characterize levels of air pollutants in communities near refineries by adding an additional fixed monitoring site. The Air District is assisting the City of Richmond on an EPA Community Scale Toxics Grant, to evaluate and interpret air toxics data collected at sites near the Chevron Refinery. The Air District is also working with the Asian Pacific Environmental Network community organization to implement a $PM_{2.5}$ community-led sensor project in the Richmond area as one of the Northern California communities participating in an EPA STAR Grant: "Engage, Educate and Empower California Communities on the Use and Applications of "Low-cost" Air Monitoring Sensors" in partnership with the South Coast Air Quality Management District.[9] Finally, there are current and historical air monitoring projects the Air District worked on with researchers and other governmental organizations that will provide data and other information to inform year 1 monitoring planning efforts.

The Air District has also provided grant funding to incentivize early-emissions reductions from projects in Richmond. Since 2016, the Air District has awarded more than $3.8 million to eligible projects in Richmond that will reduce air pollution from light-duty vehicles, locomotives, marine vessels, and off-road equipment. These projects will reduce more than 6.8 tons of NOx, 0.42 tons of ROG, and 0.37 tons of diesel PM emissions per year.

Moving forward, the Air District will continue pursuing funding from all available sources, such as state and federal agencies and settlement funds. These funds will be used to augment the Air District's traditional grant funding sources, which total approximately $50 million on an annual basis. Air District's grant funds are used to support projects that reduce air pollution and improve air quality in the Bay Area and are prioritized for communities that are disproportionately impacted by air pollution.

Stationary Source Regulations

[9] More information on EPA Star Grant may be found here: http://www.aqmd.gov/aq-spec/research-projects)

Many Air District stationary source regulations will directly benefit communities that have oil refineries, cement plants, chemical plants, large facilities, small to medium industrial sources, organic waste facilities and a variety of other sources.[10] Air District rules and programs that will improve facility and/or source emissions, and therefore community exposure to pollutants, are summarized below:

- Toxics: The Air District's Regulation 11, Rule 18 (Rule 11-18) is the most stringent health-based air toxics regulation in California. The rule requires health risk screening for all facilities in the Bay Area that report toxic air contaminant emissions. The screening analysis will determine a prioritization score for each facility. The score will be based on the amount of toxic air pollution emitted, the degree of toxicity and the proximity of pollutants to local communities. Facilities that exceed a prioritization score threshold will undergo health risk assessment for all permitted sources that emit toxic air contaminants. Facilities with health risks above a risk action threshold would be required to reduce their risk or meet retrofit control guidelines for all significant risk sources. Facilities with the highest risk levels would be required to submit risk reduction plans by 2020. Risk reductions at the highest risk facilities should be completed during 2020-2025. Others subject facilities should complete risk reductions by 2030.

- Best Available Retrofit Control Technology: Additional rules will be put into place to further reduce emissions where there are opportunities for further cost-effective controls. AB 617 required review of a set of eighty facilities, housing over 3,000 sources, throughout the Bay Area. This review resulted in the identification of up to 12 possible new regulations to further reduce emissions from these sources. These include controls on organic liquid storage tanks, petroleum wastewater treatment, Portland cement manufacturing, refinery equipment and boilers, landfills, fiberglass manufacturing and petroleum coke calcining.

- Petroleum Refineries: There are five large refineries in the Bay Area with several nearby communities, including Richmond, Crocket and Rodeo, Martinez, Clyde and Benicia. In addition to potential emission reductions due to the implementation of Rule 11-18, there are several other refinery-specific regulations that are being developed or implemented. These regulations will either help characterize emissions from these facilities, characterize cumulative exposure in communities near refineries, or achieve further emission reductions. These requirements include Rule 12-15 Petroleum Refining Emissions Tracking – which requires the refineries to establish air monitoring plans and operate fence line air monitoring systems (http://www.baaqmd.gov/plans-and-climate/emission-tracking-and-monitoring/fenceline-monitoring-plans) and Air District planning for the expansion of air monitoring in communities near refineries, using feedback from Spring 2018 public workshops. Rule 12-15 also requires refineries to submit information that will help the Air District improve and standardize emissions estimates from the petroleum refineries.

- Woodsmoke: Many communities in the San Francisco Bay Area are impacted by $PM_{2.5}$ emissions from residential wood burning, including areas in the Sonoma and Napa Valley, Santa Rosa,

[10] A stationary source is an individual fixed emitter of air pollutants, such as a boiler. A facility may have multiple individual stationary sources, such as a petroleum refining facility.

Marin and other rural communities. For some communities, especially the rural communities tucked into the many valleys of Marin, Sonoma and Napa, residential wood burning is the only significant source of $PM_{2.5}$. These areas may also have health burdens and high levels of poverty, which air pollution can exacerbate, especially if residents have limited access to health care. Several residents from rural communities in Marin County asked that their communities be included in the Air District's first year recommendations for AB 617 action. Although woodsmoke is a considerable concern in these communities, AB 617 is intended to address cumulative air quality and health burden areas; those areas that are impacted my multiple sources of air pollution, such as large industrial sources, major marine ports, congested freeways and roadways and/or rail.

Although we are not recommending any community exclusively impacted by woodsmoke for the in this submittal, the Air District is committed to reducing woodsmoke in communities impacted by the effects of wood burning. In the past several years, the Air District has both strengthened its rules related to wood burning and offered significant public funding to replace wood-burning equipment with cleaner options. The Air District is expecting to continue to address residential woodsmoke emissions through additional incentive programs that provide funding to residents to help replace older and highly polluting fireplaces and wood-burning stoves with cleaner alternatives. We are also considering further strengthening of our Wood-Burning Devices Rule.

- Permitting: The Air District is considering changes to our permitting program to address cumulative impacts. To examine the possibilities, we have created a cross-divisional workgroup to broadly review and recommend changes to the existing permitting system. We are considering all permitting policies and procedures, rules and regulations, local land use permitting guidance and CEQA guidelines.

- Odors: The Air District will be amending its odor rule, Regulation 7, to help reduce odors that impact communities. Efforts are underway to strengthen standards that limit odorous compounds and develop strategies to enhance the enforceability of the existing odor rule.

- Methane: In 2017, the Air District developed a comprehensive Basin-wide Methane Strategy, an agency-wide effort to better quantify and reduce the region's methane emissions. Rules associated with the strategy will focus on methane specific to organics material handling and to composting. In addition to climate benefits, the Methane Strategy is expected to garner reductions in reactive organic gases, a precursor to ozone formation. There is also the potential for reduction of some toxic volatile organic compounds as a co-benefit.

- Organics Recovery: The Air District is developing an Organics Recovery Strategy. Changes in state law will impact San Francisco Bay Area organics recovery, including landfill management, composting, and anaerobic digestion. In addition to possible new or modified rules, the Air District will consider non-regulatory measures to take a lifecycle approach to organics diversion. The regulations and best practices that follow from this effort are expected to reduce emissions of all pollutants associated with this process, including methane and compounds that cause odor nuisances and/or lead to ozone formation. There is also the potential for reduction of some toxic volatile organic compounds as a co-benefit.

- Particulate Matter (Fugitive Dust): A suite of regulations focusing on particulate matter emissions is going to the Air District Board for consideration in Summer 2018. Following the adoption of those new rules and amendments, implementation would target fugitive dust emissions including those from bulk material handling and from truck trackout. This would primarily help reduce particulate emissions from activities at construction sites, landfills and rock quarries, some of which impact AB 617 communities.

Mobile Source Incentives

The cost to accelerate fleet turnover in the highly impacted communities will likely require significant incentive funding to help fleet owners and operators to make early investments in cleaner technology in the absence of regulations from the state and federal governments who have regulatory authority over mobile sources. As an example, a recent review of the fleet inventory at the Port of Oakland that was developed by Port staff shows that the total cost to replace most of the existing vehicles that service the Port and equipment that is operated at the Port with cleaner alternatives is estimated to exceed $200 million.

In 2017, the legislature passed Assembly Bill (AB) 134, which appropriated $250 million in Greenhouse Gas Reduction Funds to achieve early emission reductions in communities most burdened by air pollution. Incentive funds are targeted toward engine replacement, repower, and infrastructure projects in disadvantaged and low-income areas. The San Francisco Bay Area has received $50 million of these funds. Per legislative requirements, funds will be directed at projects that can deliver "early action" emission reductions in our most disadvantaged communities, including both recommended year 1 communities, most of the recommended years 2-5 communities, and in several year 6+ communities. Funds will be directed to communities along the I-880/I-80 Corridor: Hayward to Richmond including East and West Oakland, Berkeley and Richmond; and in the Refinery Corridor: Rodeo and Vallejo, Martinez to Pittsburg.

Building Capacity in All AB 617 Communities

A wide variety of community capacity building efforts have begun and will continue as we implement AB 617 throughout the region. Capacity building means building respectful and open relationships with community members, establishing partnerships, and sharing information. It means providing the tools and assistance needed for authentic empowered participation in designing the work ahead. We expect to learn about communities, and for communities to learn more about the importance of good air quality and its contribution to community health. We are currently developing curriculum for an "Air Quality Academy," with the goal building a shared understanding of air quality issues and concerns between the Air District and our community partners. In addition, the Air District is in the process of establishing a Community-led Air Quality Sensing Program, which will seek new and improved ways to partner with community groups in addressing air quality concerns throughout the Bay Area. The Program will provide guidance and resources to ensure communities are successful in their monitoring efforts and is intended to respond to a variety of both internal and external community needs, including assisting with all aspects of community monitoring from inception, monitoring, analysis, and next steps.

Resource Needs

AB 617 is the one of most significant changes in air quality regulation in the last 35 years. Increasing the focus on localized air pollution in overburdened communities is a welcome and necessary initiative for public health and equity in California. However, it requires significant additional resources.

Community

Communities in years 1 through 5 will need funding for a variety of activities to build community readiness to eventually develop an emission reduction programs and/or community air monitoring plan. AB 617 is envisioned as a community-based endeavor, and therefore communities will be at the center of planning and decision-making regarding local priorities for action. However, not all communities are at the same starting point, or level of readiness. At each stage of the process, community organizations will need financial assistance to support their participation. Funding is especially needed for the capacity building, plan development, and plan implementation and evaluation.

- Capacity Building: includes stakeholder identification, community surveys, mappings, review of existing plans and data, formation of an AB 617 stakeholder group including local jurisdictions and regulated entities. Build shared understanding about air quality, community concerns, local issues, and about Air District programs and resources.
- Emission Reduction Program and/or Air Monitoring Plan Development: Communities co-lead a process with the Air District to develop and adopt a plan for emission reductions or air monitoring consistent with CARB guidance, with local government and other stakeholder involvement.
- Plan Implementation and Evaluation: includes implementing community monitoring, actions, or mitigations as described in the plans, review of initial milestones, and assist evaluating metrics for progress as defined in the plans.

The Air District estimates that approximately $500,000 per year will be required for community capacity building and participation in AB 617 processes. This funding is needed across the Bay Area, not just in the communities identified for years 1-5.

In addition to the community capacity building and participation efforts, some communities may desire to perform their own community-led monitoring efforts, in addition to the community-led monitoring that could be a part of implementing any active AB 617 Community Monitoring Plan. The Air District estimates that each of these community-led monitoring efforts will require $500,000.

To ensure that the data is useful in moving toward emissions reductions, the Air District will need to provide technical assistance to the communities conducting this monitoring, including study design, monitoring implementation, and data analysis and interpretation. Air District technical staff may have the capacity to assist with one of these projects per year. Therefore, the total annual costs for community-led monitoring in the Bay Area is estimated to be $500,000 per year. Total cost for community participation in AB 617 is estimated to be $1 million per year.

Air District

Most of the air pollution impacting overburdened communities is from mobile sources. Addressing the impacts of this pollution will require a cooperative effort between the local air districts and the

California Air Resources Board. Since Air Districts can only charge permit fees to stationary sources to address the impacts of their pollution, there is very limited opportunity to raise the needed funds from fees.

The Air District will incur significant start-up costs to set up its new Community Health Protection Program to implement AB 617. During the first year of implementing the state Community Air Protection Program, the Air District will incur nearly $13 million in initial costs associated with the identification of a prioritized list of impacted communities, development and adoption of a Community Action Plan, development and implementation of a Community Monitoring Plan, development of new state-wide emissions inventory protocols, review of best available retrofit control technology and potential adoption of amended regulations to gain benefits from the technology. Much of this work will become ongoing, including working with impacted communities in advance of the development of additional community action and monitoring plans.

Ongoing, annual costs for specific Air District activities are provided in Table 3.

Table 22. Air District Resource Needs

Program Component	Activity	Cost
Community Monitoring	Staff to maintain equipment, asses and analyze data, and to conduct short-term monitoring studies. Laboratory equipment and supplies. Assistance to community groups for community-led monitoring. Special studies to measure emissions from large sources using new technology.	$5.4 million
Community Emissions Reduction Plans	Staff to prepare community emission reduction programs, track community progress and prepare annual progress reports to state. Consultants for conducting CEQA analyses. Additional inspectors to provide enhanced enforcement in AB 617 communities.	$5.2 million
Community Engagement	Staffing to manage community grants and work with community-based organizations to build capacity.	$0.6 million
Review of Best Available Retrofit Control Technology	Development and implementation of new rules to reduce emissions from large stationary sources.	$0.8 million
Emissions Reporting Coordination	Ongoing improvement in emissions estimates.	$0.3 million
Overhead	Executive time to coordinate/oversee program development. Legal services for CEQA analysis and regulatory development. Administrative overhead for new staff and contracts.	$1.7 million
Total Expected Cost		**$14 million**

Community-Level Emission Inventory: Emissions Data Availability

Data for developing a community-level emissions inventory for the areas of West Oakland, Richmond, East Oakland/San Leandro, Eastern San Francisco, Pittsburg-Bay Point-Antioch, San Jose, and Vallejo are available, but significant work is required to acquire and process these data. For example, an updated emissions inventory is currently being prepared by the Port of Oakland and emissions inventories are available for stationary sources permitted by the Air District. The Air District has also compiled and modeled on-road mobile emissions for *Planning Healthy Places,*[11], a tool that helps local governments identify areas in their communities that have high levels of cancer risk from toxics and high concentrations of $PM_{2.5}$. We are also working to improve our emission inventory as data is generated through monitoring, source testing and other means. In the coming months, we will also begin working with external partners, including CARB, on a uniform methodology for performing community-level emissions inventories in all communities recommended for community emission reduction programs. The Air District looks forward to partnering with CARB in this effort, specifically in the development of mobile source emissions inventories, and especially for off-road mobile sources.

4. Public Process used to Identify, Prioritize and Select Recommended Communities

The Air District developed and implemented an extensive outreach plan to ensure community participation in the identification, prioritization, and then selection of recommended communities for the state's Community Air Protection Program. Outreach consisted predominately of public workshops and online community engagement.

The Air District held a total of eleven workshops throughout the region on AB 617, and specifically on community identification and prioritization. Outreach for workshops include informational flyers posted at libraries, community centers and other popular gathering places, e-blasts, social media posts on Facebook and Twitter, press releases and follow-up media advisories, posts in community calendars, targeted emails to key community stakeholders and Spare the Air Resource Teams, and targeted outreach at community events in target communities (e.g., groundbreaking event at Pittsburg Unified School District).

Table 3. San Francisco Bay Area AB 617 Public Workshops

Date	Workshop Title	Venue	Attendees
January 31, 2018	Landmark Local Air Pollution Legislation - AB 617	Air District Offices, 375 Beale St, Yerba Buena Rm, San Francisco, CA 94105	66
March 28, 2018	New Funding and New Efforts to Curb Local Air Pollution (AB 617)	Hilton Garden Inn, 510 Lewelling Boulevard San Leandro, CA 94579	17
April 24, 2018	AB 617 Community Health Protection Program Public Workshop	Florence Douglas Senior Center, 333 Amador St, Vallejo, CA 94590	29
April 25, 2018	AB 617 Community Health Protection Program Public Workshop	Ambrose Community Center, 3105 Willow Pass Road, Bay Point, CA 94565	13
April 30, 2018	AB 617 Community Health Protection Program Public Workshop	Pleasant Hill Community Center, 320 Civic Drive, Pleasant Hill, CA 94523	11
May 10, 2018	AB 617 Community Health Protection Program Public Workshop	Shannon Community Center, 11600 Shannon Avenue, Dublin, CA 94568	0
May 16, 2018	AB 617 Community Health Protection Program Public Workshop	San Pablo Community Center, 2450 Rd 20, San Pablo, CA 94806	28

[11] http://www.baaqmd.gov/plans-and-climate/planning-healthy-places

May 21, 2018	AB 617 Community Health Protection Program Public Workshop	Dr. Martin Luther King Jr. Library, 150 E. San Fernando St, San Jose, CA 95112	6
May 24, 2018	AB 617 Community Health Protection Program Public Workshop	Fairfield Community Center, 1000 Kentucky St, Fairfield, CA 94533	8
June 4, 2018	AB 617 Community Health Protection Program Public Workshop	Cal State East Bay Oakland Center, 1000 Broadway Avenue, Oakland, CA 94607	12
June 20, 2018	AB 617 Community Health Protection Program Public Workshop	Air District Offices, 375 Beale St, Yerba Buena Rm, San Francisco, CA 94105	34

Workshop attendees learned about the public health context for addressing air quality concerns at the local level, the goals of AB 617, the process for identifying, prioritizing and selecting communities. There was opportunity for discussion, where workshop participants could ask questions and share concerns. Following the presentations, Air District staff facilitated interactive sessions where attendees could prioritize communities for selection and early action, speak with local inspectors about local sources of pollution, guide criteria for selection and shape program objectives.

Workshop attendees rated the workshops well. All (100%) of respondents rated the facilitation and overall structure of the workshops as good to excellent. Most rated the clarity of information presented (88%) and the opportunity to ask questions (95%) as good to excellent. They found the following as the most valuable components of the workshops:

- Networking
- Interacting with Air District staff
- Learning about the intent of AB 617 and the data through presentations and handouts
- Interactive stations
- Learning from community residents
- The public health context

Respondents offered the following as opportunities for improvement:

- Better outreach/more resident attendance
- Better link the public health presentation to air quality
- Inform attendees about what selected communities will get out of being selected as an AB 617 community
- More time for Q&A

To ensure participation beyond the workshops, the Air District posted two interactive topics on Open Air Forum, the Air District's online community engagement platform. Each topic included information to inform the public about AB 617, the process for community selection and to provide an opportunity for the community to inform and guide our community selection. The goal of the first topic was to allow our community to weigh in on our community selection criteria; this topic had 254 visitors and 30 responses from the public. The survey asked respondents to rate their level of support for the methods proposed to identify candidate communities. The respondents overwhelmingly strongly support the use of CARE (81%), additional impacts (73%), and other large sources (73%). Respondents were asked to provide additional criteria that the Air District should consider, respondents recommend that we consider:

- Odors and wood smoke
- Areas with heavy idling and proximity to multiple transportation systems
- History of regulatory violations
- Socio-economic status, e.g. income, race, equity

- Historical contamination: military bases & heavy industry

Respondents were also provided the opportunity to recommend a community that was not captured by our proposed methods. Eleven out of the thirty respondents offered recommendations; however, all but one recommended community were included as candidate communities in the Air District's April 26th submittal to CARB on recommended candidate communities. (Benicia, Pittsburg, Vallejo, Mare Island, Pt. Richmond, Rodeo-Crocket, Alviso, and parts of Napa).

The one community not recommended was San Geronimo Valley in Marin County. Although heavily impacted by woodsmoke, San Geronimo Valley was not included because it is not considered a high cumulative exposure burden area. Like many other rural areas in Marin, Sonoma and Napa, woodsmoke is a considerable concern. For some communities, especially the rural communities tucked into the many valleys of Marin, Sonoma and Napa, residential wood burning is the only significant, source of $PM_{2.5}$. These areas may also have health burdens and high levels of poverty, which air pollution can exacerbate, especially if residents have limited access to health care. However, AB 617 is intended to address cumulative air quality and health burden areas; those areas that are impacted my multiple sources of air pollution, such as large industrial sources, major marine ports, congested freeways and roadways and/or rail. As described on page 9, although we are not recommending any community exclusively impacted by woodsmoke for the in this submittal, the Air District is committed to reducing woodsmoke in communities impacted by the effects of wood burning. We will continue to address residential woodsmoke through additional incentive programs that provide funding to residents to help replace older and highly polluting fireplaces and wood-burning stoves with cleaner alternatives and we are considering further strengthening of our Wood-Burning Devices Rule.

The second topic included on Open Air Forum closed on June 29th. This topic allowed community members to shape community prioritization for years 2-5. The second topic had 150 visitors and 33 responses from the public.

The survey asked respondents to rate their level of support for the criteria proposed to select communities for action. The respondents' support was variable – 41% somewhat to strongly support our selection criteria, 16% indicated that they were neutral and 44% somewhat to strongly oppose the selection criteria proposed.

Respondents were asked to provide additional criteria that the Air District should consider, respondents recommend that we:

- Include wood smoke
- Consider areas that are out of range of current Air District monitors
- Consider areas within proximity to agricultural pesticides, vehicle exhaust and/or diesel particulate matter
- Prioritize income, access to health care, race, crime rates, access to public transit, access to open spaces and other social determinants of health

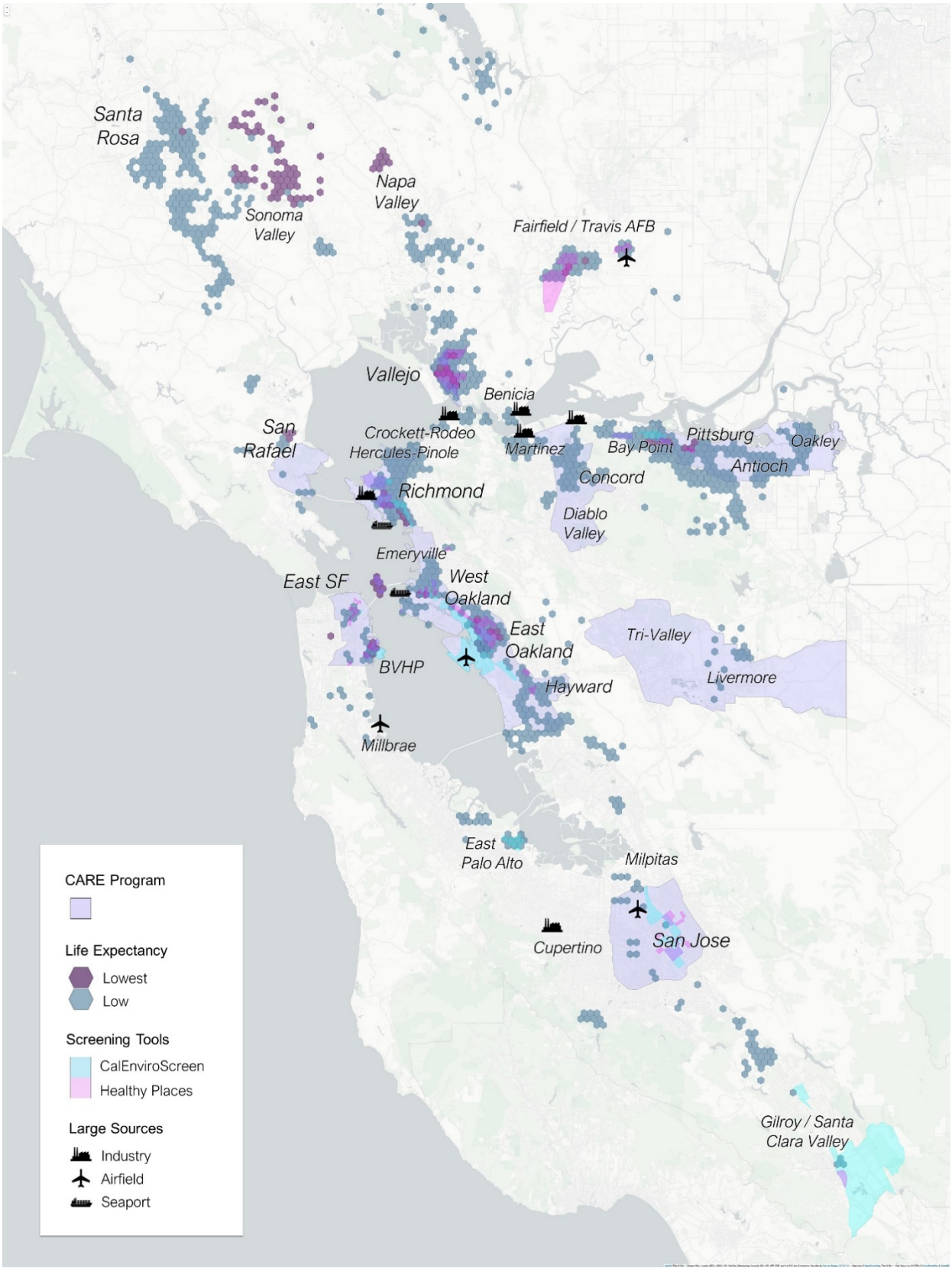
Respondents were also asked to share the sources of air pollution that concern them the most. The most common response was wood smoke, additional responses were:

- Refineries
- Emissions from mobile sources, such as cars in heavily traveled corridors and diesel particulate matter

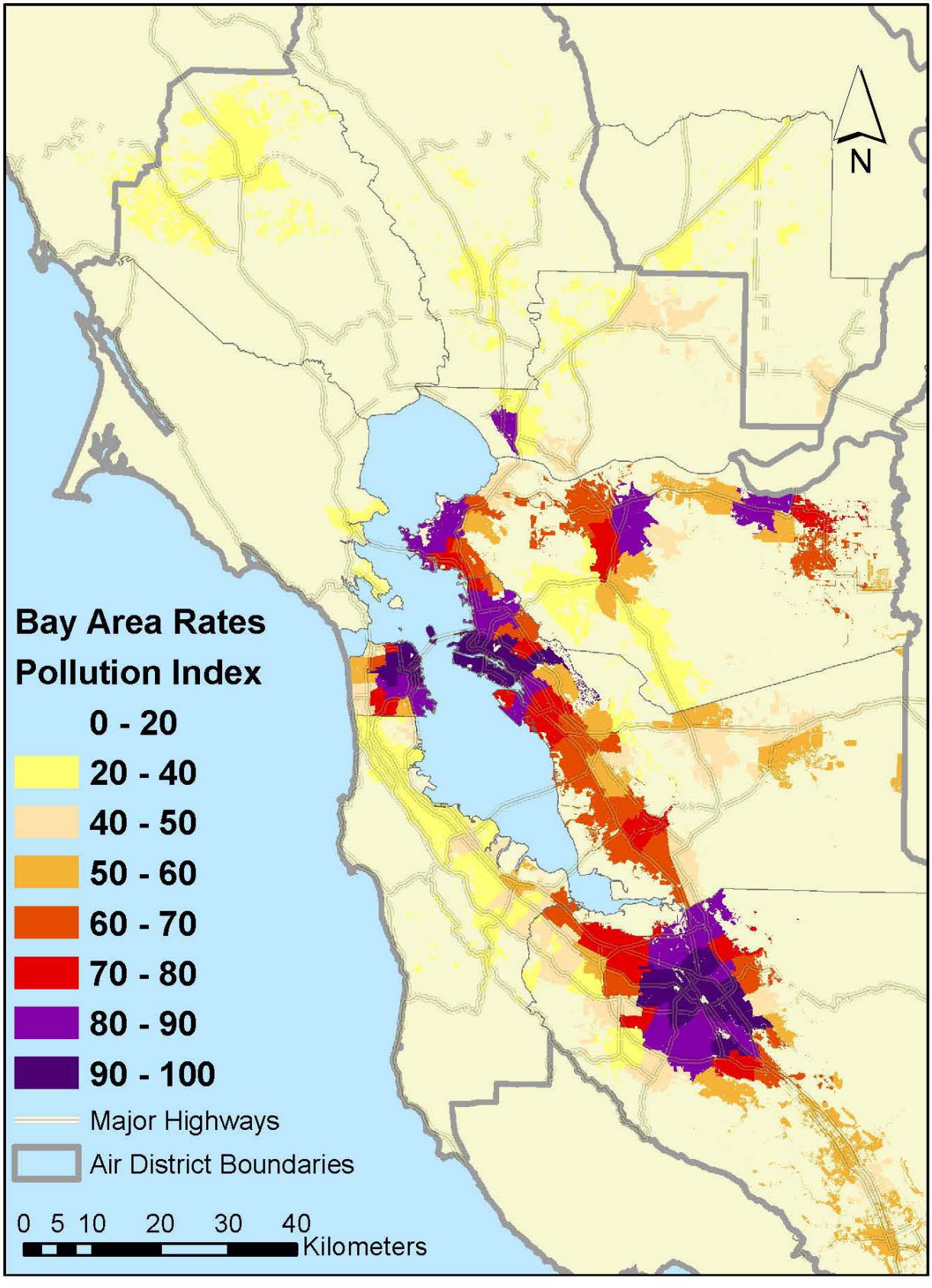
Respondents also shared their largest health concerns from heavy air pollution. The most common responses were:

- Asthma
- Emphysema
- Lung cancer
- Allergies
- Persistent coughs

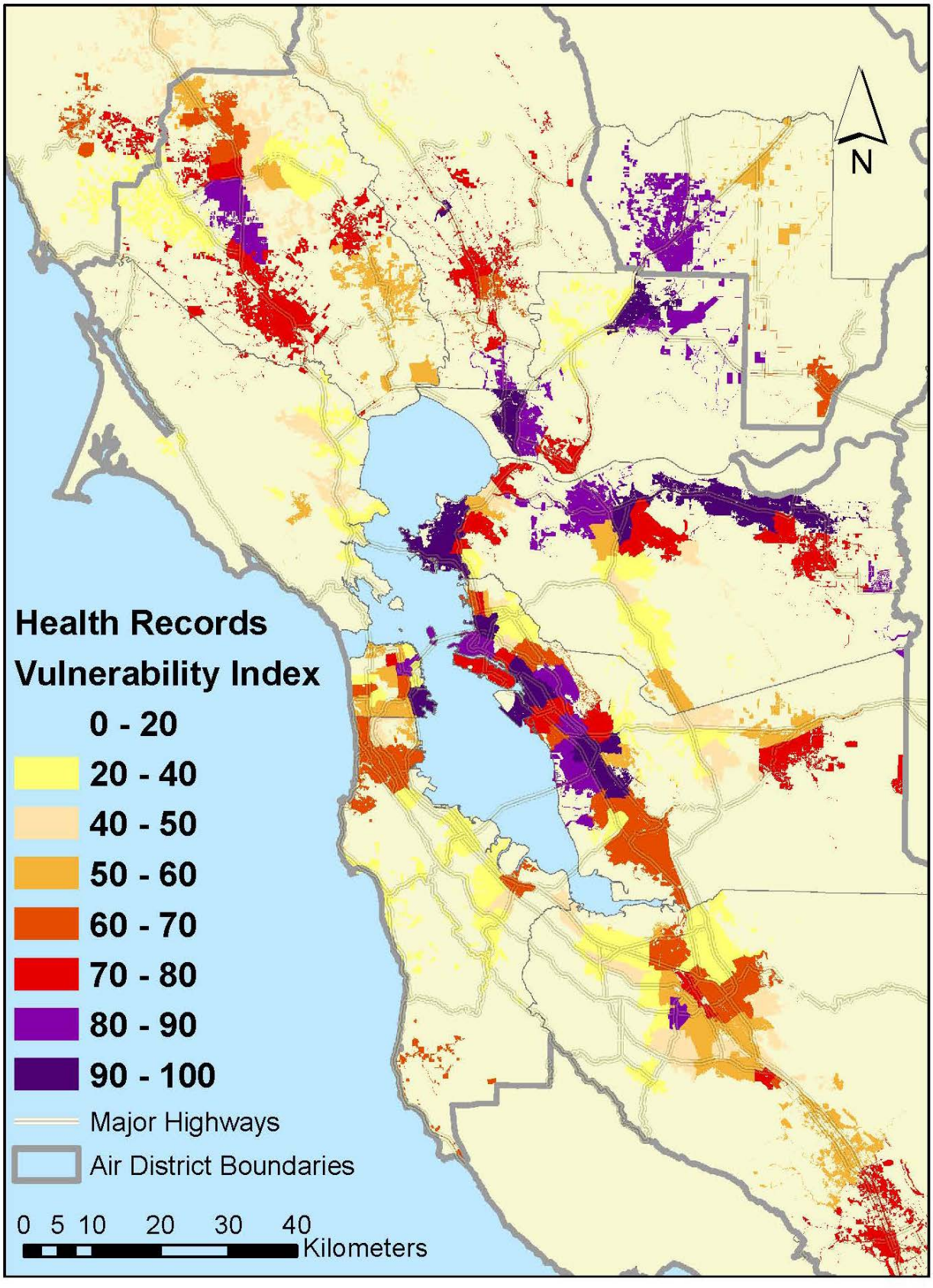
Attachment A. High Cumulative Exposure Burden Communities, SF Bay Area



Attachment B. CARE Pollution Index, SF Bay Area



Attachment C. CARE Health Vulnerability Index, SF Bay Area



Attachment D: Community Prioritization Methodology

Air Quality

Metrics:

1. **CARE Pollution Index**: modeled concentrations of cancer risk, fine PM, and ozone. Air pollution levels are mapped to zip code areas. Regional modeling for toxic air contaminant levels in 2015 were used to estimate cancer risk. Annual average $PM_{2.5}$ above background levels was estimated using regional air quality modeling of representative days in 2010 and 2011, and observations from San Francisco Bay Area monitoring sites. Mean 8-hour ozone above background levels was interpolated from observations in 2010 and 2011 at monitoring sites only.
2. **$PM_{2.5}$ Monitoring Data:** Many metrics describing $PM_{2.5}$ concentrations measured at monitoring sites in the Bay Area from 2013-2017 were evaluated, including: the maximum, mean, and 98th percentile of the 24-hour concentrations each year, the annual means, and the 24-hour and annual design values. Using many metrics helps assess sites that might exhibit differing concentration distributions, such as a few very high values versus a high annual mean. Health research data show that both acute and chronic exposure to $PM_{2.5}$ are issues of concern.
3. **Toxics Monitoring Data:** Annual means of 24-hour concentrations of several key toxic air contaminants (including toluene, m/p-xylene. o-xylene, ethyl benzene, 1,3-butadiene and, benzene) concentration measurements from monitoring sites in the San Francisco Bay Area. Data are for the 2013-2017 period.

Methodology:

a. Pollution index data by zip codes were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff reviewed maps and noted geographic areas that had high, medium and low levels of pollution.
b. $PM_{2.5}$ monitoring data were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff gave geographic areas a high/medium/low ranking based on a combination of $PM_{2.5}$ metrics. Areas of expected high cumulative exposure burden that do not have a $PM_{2.5}$ monitoring site were either extrapolated from a nearby site depending on meteorology and topography, or the $PM_{2.5}$ metric was not used. The latter type of areas was scored only on the available information from CARE.
c. Toxics (toluene, m/p-xylene. o-xylene, ethyl-benzene, 1,3-butadiene and benzene) monitoring data were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff gave each geographic area a high/medium/low ranking based on the data. Areas of expected high cumulative exposure burden that do not have a toxics monitoring site were either extrapolated from a nearby site, depending on meteorology and topography, or the toxics metric was not used. The latter type of areas was scored only on the available information from CARE and, if available, $PM_{2.5}$ monitoring sites.

Health Burden

Metrics:

1. **CARE Vulnerability Index**: Mortality rates, ER visits, and hospitalizations attributed to causes known to be aggravated by air pollution were used to estimate health vulnerability. Death records are for years 2008-2010. Emergency room visits, and hospital records are for years 2009-2011.
2. **Life Expectancy:** Life expectancy data is obtained from the California Healthy Places Index project. Places that scored within the lowest 50 percent are classified as 'low life expectancy,' and those within the lowest 25 percent are classified as 'lowest life expectancy.'

Methodology:

a. Vulnerability index data by zip codes were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff reviewed maps and selected geographic areas that have high, medium and low levels of health vulnerability.

b. Lowest and low life expectancy data by census tract block groups were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. The life expectancy results were mapped to display concentrations of low life expectancy in the region. Air District staff reviewed maps and selected areas in the AB 617 universe that have high, medium and low levels of life expectancy.

Other Information Used in Understanding High Cumulative Exposure Burden Communities

1. **Community Capacity** – Current levels of community capacity were considered in selecting first year action communities. Community capacity means having relationships with community members, established partnerships and the ability to share information. It means having the tools needed for authentic empowered participation in the work. It also means having some significant levels of knowledge, research and previous planning or other studies that can be leveraged as we moved forward in a community.

2. **Sources –** *Total sources:* Total permitted stationary sources, by size and type; mobile sources, including freeways, roadways, rail, distribution centers.

3. **Cal Enviro Screen 3.0** – CalEnviroScreen is a mapping tool that uses environmental, health, and socioeconomic information from state and federal government sources to identify California communities that are disadvantaged. Disadvantaged communities include those most affected by multiple sources of pollution and those where the population is especially vulnerable to pollution's effects. CalEnviroScreen 3.0 scores are used to rank and map every census tract in the state by percentile. Census tracts in the San Francisco Bay Area that were ranked within the top 25 percent of statewide scores were included in the Air District's recommendation of high cumulative exposure areas. Those areas with the highest scores across all metrics, and individual metrics, including socio-economic, were noted.

4. **Healthy Places Index –** The California Healthy Places Index was developed by the Public Health Alliance of Southern California. The index includes diverse non-medical economic, social, political and environmental factors that influence physical and cognitive function, behavior and disease. The total score is used to screen for places with high health burden. Census tracts in the San Francisco Bay Area that rank within the top 25 percent of statewide scores were included in the Air District's recommendation of high cumulative exposure areas. Those areas with the highest scores across all metrics, and individual metrics including socio-economic and racial demographics, were noted.

5. **Proximity of emissions to sensitive receptors** – The **Environmental Justice Screening Method** (EJSM) was developed for the California Air Resources Board (CARB) to examine cumulative impacts and social vulnerability within California regions, as well as to identify overburdened communities. The Air district used the hazard proximity portion of this tool to identify the areas that have sensitive receptors near sources of significant emissions since this measure of exposure is not included in the other environmental justice screening tools. More Information about the calculation of the hazard proximity scores is at https://www.arb.ca.gov/research/apr/past/11-336.pdf.

Final Analysis and Recommendations

The main metrics describing air quality and health issues were combined to reveal a group of geographic areas that showed consistently high air quality and health burdens, including West Oakland, the Richmond area, East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose and Vallejo. Given the legislatively required deadlines for year one activities, West Oakland and Richmond areas were selected for year 1 action; West Oakland for a community emission reduction program and the Richmond area for a community air monitoring plan. The remaining communities, East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose and Vallejo are recommended for years 2-5. Note that the recommendations for years 2-5 were based on the best data currently available to the Air District. As we continue to improve our data on health burden and air pollution exposure, the list of recommended communities may change. This list will be re-evaluated every year.

Historical and ongoing activities in West Oakland and Richmond provide opportunities that the Air District and partner communities can leverage to make a successful community emission reduction program and/or community air monitoring plans feasible. In West Oakland, there has been over a decade of monitoring and policy work done to understand and reduce exposure to air pollution in West Oakland, by the Air District, West Oakland Environmental Indicators Project and other community groups, and scientific researchers. This body of knowledge, and the established relationship between the Air District and the West Oakland Environmental Indicators Project positions West Oakland as a community most likely to be able to meet the legislated deadlines for the first community emission reduction program process. There are several air monitoring and air quality data analysis efforts ongoing in Richmond. These efforts can be leveraged to ensure the Richmond community air monitoring plan is feasible and successful in the short state-mandated time frame. One such effort is the expansion of the fence-line monitoring system at the Chevron Refinery. Chevron has proposed to expand its fence-line monitoring system to meet the requirements of the Air District's Regulation 12, Rule 15 (Rule 12-15). Additionally, as part of the Rule 12-15 process, the Air District committed to expand efforts to characterize levels of air pollutants in communities near refineries by adding an additional fixed monitoring site. The Air District is assisting the City of Richmond on an EPA Community Scale Toxics Grant, to evaluate and interpret air toxics data collected at sites near the Chevron Refinery. The Air District is also working with the Asian Pacific Environmental Network community organization to implement a $PM_{2.5}$ community-led sensor project in the Richmond area as one of the Northern California communities participating in South Coast Air Quality Management District's EPA STAR Grant: "Engage, Educate and Empower California Communities on the Use and Applications of "Low-cost" Air Monitoring Sensors".[12] Finally, there are current and historical air monitoring projects the Air District worked on with researchers and other governmental organizations that will provide data and other information to inform year 1 monitoring planning efforts.

[12] More information on EPA Star Grant may be found here: http://www.aqmd.gov/aq-spec/research-projects

Attachment E. Final Submittal Requirements, California Air Resources Board

Air District final submittal: Public process for determination of recommended communities

Due: July 31, 2018

Air districts recommending communities for AB 617 2018 Community Selections must provide documentation addressing the following elements in the final submittal:

1) Describe (including geographic boundaries) the communities from the preliminary list that the air district is recommending for inclusion in year one for:

a) A community air monitoring plan

b) A community emissions reduction program

2) In accordance with statute, CARB staff are required to return to the Board annually for recommendations on additional communities. Describe the communities from the preliminary list the air district is recommending for inclusion in subsequent years, recognizing that additional data and public input may result in updates to the final recommendations for each year:

a) Community air monitoring and/or community emissions reduction programs in years 2 through 5

b) Community air monitoring and/or community emissions reduction programs in years 6 and beyond

3) Provide information on the following questions for each community recommended for year 1 and communities being considered for years 2-5:

a) Has work already started in the community?

b) What are the anticipated resource needs for each recommended community for both the air district and the community?

c) Are emissions data available to develop a community level emission inventory?

4) Describe the public process used to identify, then prioritize and select recommended communities? Provide a brief overall summary of comments received and specify how many attendees were at each workshop or meeting.

5) Any additional information the air district would like to provide, including any community recommendations for future year implementation.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 16, 2018

Re: Update on the Governor's Global Climate Action Summit

RECOMMENDED ACTION

Recommend Board of Directors:

1. Seek support from their jurisdictions for the Diesel Free by '33 Statement of Purpose and encourage signatures from Mayor's both within and outside the Bay Area.

2. Encourage participation from cities, counties and businesses Request at the Climate Technology Showcase event.

BACKGROUND

At the beginning of 2018, the Air District submitted proposals for 2 affiliated events to the Governor's Climate Action Summit scheduled September 12-14, 2018 in San Francisco. The Diesel Free by '33 and Climate Technology Showcase events are both hosted by the Air District and will be held at the Bay Area Metro Center, 375 Beale St. San Francisco.

The Diesel Free event is intended to bring mayors, county supervisors and industry leaders together to sign a commitment in principal to go diesel free in their communities by 2033.

The Technology Showcase will bring together the latest low/zero emission technology products and programs with those who are could benefit from the latest emissions reducing technology.

DISCUSSION

The Air District was selected to host 2 affiliated events at the Governor's Global Climate Action Summit.

1. September 12, 2018 – United Against GHG's – Diesel Free by '33 hosted by the Air District. The agenda and event logistics are in the planning process and requests are out for speakers.

2. September 13, 2018 - Climate Technology Showcase – hosted by the Air District. Call for technology vendor displays has been made and planning is underway.

Staff will update the Committee on planning and details for both events including the new Diesel Free by '33 website, technical support documents and revised *Statement of Purpose*.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Lisa Fasano
Reviewed by: Damian Breen

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 9, 2018

Re: Technology Implementation Office Update and Summary of Steering Committee Meeting

RECOMMENDATION

Recommend the Board of Directors:

1. Authorize the Executive Officer/APCO to negotiate and execute an agreement with the IBank not to exceed $4,185,000 to fund a loan program for Bay Area industrial facilities

BACKGROUND

The Technology Implementation Office (TIO) mission is to accelerate climate action by cultivating partnerships between technology developers and customers and offering grants and loans for low-carbon technologies for the industrial and transportation sectors. The TIO Steering Committee met on June 21, 2018. The technology assessment and loan program that were discussed at this meeting will be summarized for the Executive Committee and Board of Directors.

STATIONARY LOAN PROGRAM

The Technology Implementation Office has worked with other Air District Divisions and engaged a consultant to evaluate technology options for loan projects. The evaluation criteria include technology readiness, costs, technical and market barriers, and potential for emissions reductions. The product will be a final report and matrix of technologies that the Air District can maintain and use to prioritize the technologies to be supported through proposed financing and partnership programs. As part of this Agenda Item, Air District staff will provide a progress update and share example technologies with the Executive Committee and Board.

Air District staff will also provide an update on the collaboration being developed between the Air District and the California Infrastructure and Economic Development Bank (IBank). Staff is proposing an agreement that would enable the Air District funds to be used for loans and loan guarantees to Bay Area stationary facilities through the IBank's existing processes. As project implementers pay back their loans, funding can be reinvested in additional greenhouse gas technology projects dictated by the Air District. The collaboration would enable the Air District to participate in loan projects, accelerate the implementation of emerging technologies, and provide financial incentives for Bay Area facilities to make emission reductions. Air District staff will provide matchmaking and technical evaluations that expand the IBank's customer base and push implementation of eligible greenhouse gas reduction technologies. The Air District funding will leverage IBank monies in a ratio as high as 10 to 1 to execute selected projects.

As part of this Agenda Item, staff will present the key terms of this agreement with the IBank (summarized in Attachment 1) to the Committee and recommend the Executive Officer/APCO negotiate a final agreement with the IBank based on these terms.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None. Funding for the IBank agreement is part of the Board approved Fiscal Year Ending (FYE) 2019 budget.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Derrick Tang
Reviewed by: Ranyee Chiang

Attachment 6A: Key Terms of Agreement with IBank

Attachment 6A – Key Terms of Agreement with IBank

The California Infrastructure and Economic Development Bank ("IBank") and Air District are negotiating a Memorandum of Agreement to enhance two IBank programs: the California Lending for Energy and Environmental Needs ("CLEEN") Center for direct public financing to Municipalities, Universities, Schools, and Hospitals (MUSH borrowers), and the California Small Business Loan Guarantee Program (SBLGP) for loan guarantees for small businesses. Following are the key terms of the agreement to be negotiated and finalized:

- The Air District shall negotiate an agreement to fund this program up to $4,185,000: $3,000,000 shall be reserved for the CLEEN program; $1,000,000 shall be reserved for SBLGP; and $185,000 shall be reserved to cover initial fees for projects.

- Air District funds will transfer to IBank on an as-needed basis.

- The Air District portion of the loan shall be repaid in 5 years or less.

- The Air District portion of losses in loans and loan guarantees are borne by the Air District.

- The total liability of the Air District under this Agreement shall not exceed the total amount of the Air District's outstanding loans and loan guarantees made under the Agreement plus initial fees, or an amount not to exceed $4,185,000, whichever is less.

- The Air District may terminate the program with 30 days advance notification; remaining unallocated funds are not committed to IBank programs.

- The Air District shall establish Program Guidelines to define minimum requirements of projects that are eligible for Air District funding. All CLEEN loans and SBLGP loan guarantees financed in any part with funds from the Air District must comply with the Program Guidelines established by the Air District.

    - For example, all projects must be located in the Bay Area and fall under specific technology categories as identified in the Air District technology assessment.
    - Program Guidelines may be updated periodically.

- The Air District shall conduct engineering evaluations of projects that meet the minimum requirements as defined in the Program Guidelines and provide the results of the evaluations to the IBank.

- The maximum Air District participation per project shall be $1,000,000 or 25% of a single loan; and $250,000 or 10% of loan principal in a single loan guarantee.

- The CLEEN program shall lend Air District funds at 0% interest.

- IBank can guarantee up to 80% of loan principal through SBLGP. For SBLGP loan guarantee projects that meet the minimum requirements of Program Guidelines, Air District funds will be used to guarantee up to an additional 10% of loan principal.

    - In the event of loan default, Air District liability shall not exceed the amount of the Air District portion of the loan guarantee. Loss rates are historically under 2%.

- The Air District shall initially pay trustee fees, origination fees, servicing fees, and loan guarantee fees charged to the borrower, up to a cumulative amount not to exceed $185,000.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 15, 2018

Re: Status Update on the Air District's Advisory Council

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

Senate Bill 1415 (SB1415), effective July 1, 2015, reconstituted the membership of the Bay Area Air Quality Management District (Air District) Advisory Council to include seven appointed members "skilled and experienced in the fields of air pollution, climate change, or the health impacts of air pollution. Members shall be selected to include a diversity of perspectives, expertise and backgrounds." The Council is "to advise and consult with the bay district board and the bay district air pollution control officer in effectuating the purposes of" the Air District.

ADVISORY COUNCIL MEMBERSHIP

At its May 7, 2018 meeting the Personnel Committee recommended, and the Board subsequently approved the appointment of Gina M. Solomon, M.D., M.P.H., and Linda Rudolph, M.D., M.P.H., to the Council for a two-year term.

ADVISORY COUNCIL MEETING UPDATE AND NEXT AREA OF FOCUS

On July 19, 2018 the Council was provided with a presentation on early progress regarding AB 617 implementation, including discussions with the California Air Resources Board and how this moves the Air District's program beyond the target of attainment for criteria pollutants.

The Council was also presented with a discussion of Diesel particulate matter (diesel PM), and the degree to which it remains a significant contributor to health impacts from air pollution in the Bay Area, especially for disadvantaged communities living near freeways and industrial areas.

Staff reviewed the health impacts from exposures to diesel PM, and summarized studies showing that diesel PM contributes about 65% of the regional cancer risk from air pollution and about 15% of regional $PM_{2.5}$.

Next the Council reviewed the Air District's multilayered approach to reducing and eliminating diesel PM from Bay Area industries and communities and discussed their possible concurrence on a process to evaluate and possibly implement a variety of strategies, including strategies that use incentives and other non-regulatory methods.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 12, 2018

Re: Amendments to Air District Administrative Code Addressing Resolutions

RECOMMENDED ACTION

Recommend Board of Directors consideration and approval of language amending the Air District's Administrative Code to address introduction and amendment of resolutions to be adopted by the Board of Directors. If approved by the Committee, in accordance with the Air District's Administrative Code, language amending the Administrative Code will be noticed in an upcoming Board of Directors meeting agenda, and placed on the Agenda for adoption at a subsequent meeting.

BACKGROUND

Over the past few years, a number of resolutions have been considered by the Board of Directors, but it has not always been clear to the Board members who authored the resolution language. As a result, concerns have been raised about the process by which resolutions are drafted and amended. Accordingly, staff was directed to propose an amendment to the Air District's Administrative Code to clarify the process for proposal of resolutions and amendments.

DISCUSSION

The following language is proposed to address the Board's direction:

SECTION 1 BOARD OF DIRECTORS, MEETINGS

[New] **1.6 ADOPTION OF RESOLUTIONS.**

When a resolution is necessary or appropriate to document an action of the Board of Directors, such as when adopting a rule or regulation, or establishing a Board of Directors policy related to Air District governance, staff shall prepare a draft resolution and shall include that draft with supporting materials in the agenda for the meeting at which the action is to be taken. If a member of the Board wishes to amend the draft resolution or introduce a different resolution, that member shall introduce such resolution or amendment at the appropriate time by motion in the course of the related hearing. Any such amendment or different resolution requires a second and the affirmative vote of the Board to consider the resolution. In order

to provide opportunity for notice and public comment, the adoption of any such amended or different resolution shall be taken up at a subsequent meeting of the Board of Directors and shall require the affirmative vote of a majority of the Board.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Brian C. Bunger

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 12, 2018

Re: Discussion of Procedures for Receiving Public Comment on Non-Agenda Topics

RECOMMEND ACTION

The Committee will discuss procedures for receiving public comment on topics not included in an item on a posted agenda.

BACKGROUND

California Government Code sections 54950, et seq. (the "Brown Act") mandates, among other things, that the public be afforded an opportunity to provide comment on items on the agenda before or at the time the item is considered. The Brown Act also mandates that public meeting agendas provide an opportunity for members of the public to address a legislative body on any topic within the subject matter jurisdiction of the body, regardless of whether the item is on the agenda (often referred to as "non-agenda" comment). The Brown Act provides latitude to the legislative body to arrange its agenda to orderly receive such comment.

DISCUSSION

At various times in the past, the Air District's Board and Committees have received non-agenda comment at the beginning of the agenda, before taking up specific agenda items, at the end of the agenda, and split, with a defined number of comments received at the outset, and the remainder at the conclusion, of the agenda. Members of the public have complained about all of these approaches.

Recently, comment was shifted from the beginning of the agenda to the end of the agenda, because the volume of non-agenda comment at some meetings has resulted in the business on the agenda not being fully considered by the Board of Directors or its Committees. This change prompted complaints from members of the public. In response, Board Chairman Dave Hudson committed to discuss with the Board's Executive Committee the issue of the appropriate place on meeting agendas and procedures for receiving non-agenda comment in a manner that does not impact consideration of Air District business on the noticed agenda.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Brian C. Bunger

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 23, 2018

Re: Report of the Ad Hoc Refinery Oversight Committee Meeting of July 25, 2018

RECOMMENDED ACTION

The Ad Hoc Refinery Oversight Committee (Committee) received only informational items and has no recommendations of approval by the Board of Directors.

BACKGROUND

The Committee met on Wednesday, July 25, 2018, and received the following reports:

A) Trends in Crude Oil Imports, Petroleum Refining, Crude Oil Transportation and an Outlook for Future Petroleum Markets;

B) Issues and Concerns Regarding Future Refinery Crude Slates; and

C) The Legal Framework for the Air District.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None;

B) None; and

C) None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Vanessa Johnson

Attachment 11A: 07/25/18 – Ad Hoc Refinery Oversight Committee Meeting Agenda #3
Attachment 11B: 07/25/18 – Ad Hoc Refinery Oversight Committee Meeting Agenda #4
Attachment 11C: 07/25/18 – Ad Hoc Refinery Oversight Committee Meeting Agenda #5

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Cindy Chavez and Members
of the Ad Hoc Refinery Oversight Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2018

Re: Trends in Crude Oil Imports, Petroleum Refining, Crude Oil Transportation and an Outlook for Future Petroleum Markets

RECOMMENDED ACTION

None; receive and file.

SUMMARY

The California Energy Commission (CEC) is the agency responsible for identifying and assessing major energy trends and issues in California, including those associated with crude oil markets and the refining of crude oil within the State of California.

DISCUSSION

Mr. Gordon Schremp, Senior Fuels Specialist who advises the Commissioners, Executive Officer, Governor's Office and Legislature, will present information on trends in crude oil imports, petroleum refining, and crude oil transportation as well as an outlook of petroleum markets.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectively submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Pamela Leong
Reviewed by: Damian Breen

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Cindy Chavez and Members
of the Ad Hoc Refinery Oversight Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 11, 2018

Re: Issues and Concerns Regarding Future Refinery Crude Slates

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

Environmental advocacy groups have raised concerns about future crude supplies to Bay Area refineries, and their potential impact on air emissions. Regulation 12, Rule 15: Petroleum Refinery Emissions Tracking was adopted on April 20, 2016, to provide consistent information on refinery raw material inputs, and air emissions.

The Carnegie Endowment for International Peace has also developed an Oil Climate Index to compare greenhouse gas impacts for a wide variety of crudes, including the impacts from energy required to produce the crude and ship it to refineries; the impacts from the energy required to refine and market the crude, and the impacts from end use of the resulting power and transportation fuels.

DISCUSSION

Air District staff will provide a summary of the information obtained regarding crude slates processed at Bay Area refineries and speak to the issues and concerns about future crude supplies and their potential impact on air emissions.

Air District staff also will present information that provides context for understanding the concerns about tar sands crudes and other potential crude sources as future replacements for declining volumes of California-based crudes. Staff will also explain how the Oil Climate Index and individual crude oil yield structures provide a frame of reference to compare the wide variety of crudes available.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Guy Gimlen
Reviewed by: Victor Douglas

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Cindy Chavez and Members
of the Ad Hoc Refinery Oversight Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 16, 2018

Re: The Legal Framework for the Air District

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

Several Board members have requested information on aspects of the Air District's legal authority. This presentation will provide an overview of the topic.

DISCUSSION

Staff will discuss the legal framework in which the Air District operates and the legal authorities granted and obligations imposed by that framework.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Brian Bunger

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 25, 2018

Re: Report of the Mobile Source Committee Meeting of July 26, 2018

RECOMMENDED ACTION

The Mobile Source Committee (Committee) recommends Board of Directors' approval of the following items:

A) Projects and Contracts with Proposed Grant Awards Over $100,000 and a Request for a Waiver for Fiscal Year Ending 2018 Transportation Fund for Clean Air Regional Fund Policies from the Town of Los Gatos

1) Approve Carl Moyer Program and Transportation Fund for Clean Air (TFCA) projects with proposed grant awards over $100,000 as shown in Attachment 1;

2) Approve a policy waiver to allow the Town of Los Gatos to be eligible for funding from the Fiscal Year Ending 2018 TFCA Regional Fund for a bikeway improvement project that will upgrade an existing Class II bicycle lane to a separated Class IV bikeway; and

3) Authorize the Executive Officer/APCO to enter into all necessary agreements with applicants for the recommended projects.

B) Approval of Contract for Clean Cars for All Program Case Managers

1) Authorize the Executive Officer/APCO to execute a contract with Grid Alternatives at a cost not to exceed $250,000 for services performed in Fiscal Year Ending (FYE) 2018 and FYE 2019.

C) New Grant Program Revenues and Request to Increase Staffing in the Strategic Incentives Division

1) Authorize the Bay Area Air Quality Management District (Air District) to accept, obligate, and expend up to $130 million in funding from the Volkswagen Environmental Mitigation Trust (VW Trust) and $1,160,311 in funding from the United States Environmental Protection Agency; and amend the Fiscal Year Ending (FYE) 2019 budget to account for this new funding;

2) Authorize the Executive Officer/APCO to enter into all agreements necessary to accept, obligate, and expend this funding; and

3) Authorize the creation of eight additional full-time equivalent (FTE) positions in the Strategic Incentives Division.

BACKGROUND

The Committee met on Thursday, July 26, 2018, and received the following reports:

A) Projects and Contracts with Proposed Grant Awards Over $100,000 and a Request for a Waiver for Fiscal Year Ending 2018 Transportation Fund for Clean Air Regional Fund Policies from the Town of Los Gatos;

B) Approval of Contract for Clean Cars for All Program Case Managers; and

C) New Grant Program Revenues and Request to Increase Staffing in the Strategic Incentives Division.

Chairperson Scott Haggerty will provide an oral report of the Committee meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None. Through the CMP, MSIF, Community Health Protection Grant Program, and TFCA, the Air District distributes "pass-through" funds to public agencies and private entities on a reimbursement basis. Administrative costs for these and each of the new proposed funding programs are provided by each funding source;

B) Funding for this GRID Alternatives contract comes from a $5M grant from the California Air Resources Board and is supported by the "California Climate Investments" (CCI) program; and

C) None. Administrative costs for these programs will be provided by each funding source. The additional revenue from these funds and from the Air District's current allocation of general funds is anticipated to cover the cost of the additional eight new FTEs. Funding for this program spans a 10-year period and staff anticipates it will be able to manage program ramp down through its normal attrition process.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Vanessa Johnson

Attachment 12A: 07/26/18 – Mobile Source Committee Meeting Agenda #3
Attachment 12B: 07/26/18 – Mobile Source Committee Meeting Agenda #4
Attachment 12C: 07/26/18 – Mobile Source Committee Meeting Agenda #5

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Scott Haggerty and Members of the Mobile Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 9, 2018

Re: Projects and Contracts with Proposed Grant Awards over $100,000 and a Request for a Waiver for Fiscal Year Ending 2018 Transportation Fund for Clean Air Regional Fund Policies from the Town of Los Gatos

RECOMMENDED ACTION

Recommend Board of Directors:

1. Approve Carl Moyer Program and Transportation Fund for Clean Air (TFCA) projects with proposed grant awards over $100,000 as shown in Attachment 1;

2. Approve a policy waiver to allow the Town of Los Gatos to be eligible for funding from the Fiscal Year Ending 2018 TFCA Regional Fund for a bikeway improvement project that will upgrade an existing Class II bicycle lane to a separated Class IV bikeway; and

3. Authorize the Executive Officer/APCO to enter into all necessary agreements with applicants for the recommended projects.

BACKGROUND

The Bay Area Air Quality Management District (Air District) has participated in the Carl Moyer Program (CMP), in cooperation with the California Air Resources Board (ARB), since the program began in fiscal year 1998-1999. The CMP provides grants to public and private entities to reduce emissions of oxides of nitrogen (NOx), reactive organic gases (ROG) and particulate matter (PM) from existing heavy-duty engines by either replacing or retrofitting them. Eligible heavy-duty diesel engine applications include on-road trucks and buses, off-road equipment, marine vessels, locomotives, and stationary agricultural pump engines.

Assembly Bill 923 (AB 923 - Firebaugh), enacted in 2004 (codified as Health and Safety Code (HSC) Section 44225), authorized local air districts to increase their motor vehicle registration surcharge up to an additional $2 per vehicle. The revenues from the additional $2 surcharge are deposited in the Air District's Mobile Source Incentive Fund (MSIF). AB 923 stipulates that air districts may use the revenues generated by the additional $2 surcharge for projects eligible under the CMP.

In 2017, Assembly Bill (AB) 617 directed the ARB, in conjunction with local air districts to establish the Community Air Protection Program. AB 617 provides a new community-focused action framework to improve air quality and reduce exposure to criteria air pollutants and toxic air contaminants in communities most impacted by air pollution. In advance of the development of the Community Air Protection Program, the Governor and legislature established an early action component to AB 617 to use existing incentive programs to get immediate emission reductions in the communities most affected by air pollution. AB 134 (2017) appropriated $250 million from the Greenhouse Gas Reduction Fund (GGRF) to reduce mobile source emissions including criteria pollutants, toxic air contaminants, and greenhouse gases in those communities. The Bay Area has been allocated $50 million of these funds for emission reduction projects. These funds will be used to implement projects under the CMP, and optionally under the Proposition 1B Goods Movement Emission Reduction Program.

On March 1, 2017, the Board of Directors (Board) authorized Air District participation in Year 19 of the CMP, and authorized the Executive Officer/APCO to execute Grant Agreements and amendments for projects funded with CMP funds or MSIF revenues, with individual grant award amounts up to $100,000.

In 1991, the California State Legislature authorized the Air District to impose a $4 surcharge on motor vehicles registered within the nine-county Bay Area to fund projects that reduce on-road motor vehicle emissions within the Air District's jurisdiction. The statutory authority for the Transportation Fund for Clean Air (TFCA) and requirements of the program are set forth in the HSC Sections 44241 and 44242. Sixty percent of TFCA funds are awarded by the Air District to eligible projects and programs implemented directly by the Air District (e.g., Spare the Air, electric vehicle charging station program) and to a program referred to as the TFCA Regional Fund. Each year, the Board allocates funding and adopts policies and evaluation criteria that govern the expenditure of TFCA funding.

On April 19, 2017, the Board allocated $29.24 million in TFCA monies, including both new funds and carryover, for eligible projects in Fiscal Year Ending (FYE) 2018, authorized cost-effectiveness limits for Air District-sponsored FYE 2018 programs, and authorized the Executive Officer/APCO to execute Grant Agreements and amendments for TFCA-revenue funded projects with individual grant award amounts up to $100,000. On August 2, 2017, the Board adopted policies and evaluation criteria for the FYE 2018 TFCA Regional Fund program.

CMP and TFCA projects with grant award amounts over $100,000 are brought to the Mobile Source Committee for consideration at least on a quarterly basis. Staff reviews and evaluates grant applications based upon the respective governing policies and guidelines established by the ARB and the Board.

DISCUSSION

Carl Moyer Program and Community Health Protection Grant Program:

For the CMP Year 19 cycle, the Air District had more than $16 million available for eligible CMP and school bus projects from a combination of MSIF and CMP funds. The Air District started

accepting project applications for the CMP Year 19 funding cycle on October 12, 2017 and applications are accepted and evaluated on a first-come, first-served basis. On December 20, 2017 the Board authorized the Air District to accept, obligate and expend $50 million in AB 134 funds through the Community Health Protection Grant Program.

As of July 6, 2018, the Air District had received 186 project applications. Of the applications that have been evaluated between May 4 and July 6, 2018, seven eligible projects have proposed individual grant awards over $100,000. These projects will replace nine pieces of agricultural equipment, eight school buses, one piece of off-road equipment, and five transit buses, and will reduce over 3.9 tons of NOx, ROG and PM per year. Staff recommends the allocation of $2,454,929 for these projects from a combination of CMP funds, MSIF revenues and Community Health Protection Grant Program funds. Attachment 1, Table 1, provides additional information on these projects.

Attachment 2, lists all of the eligible projects that have been received by the Air District as of July 6, 2018, and summarizes the allocation of funding by equipment category, and county. Approximately 63% of the funds have been awarded to projects that reduce emissions in highly impacted Bay Area communities. Attachment 3 summarizes the cumulative allocation of CMP, MSIF, and Community Health Protection Grant Program funding since 2009 (more than $171 million awarded to 895 projects).

Transportation Fund for Clean Air Program:

The Air District started accepting project applications for the FYE 2018 TFCA funding cycle on July 1, 2017. As of July 6, 2018, the Air District had received 82 FYE 2018 project applications. Of the applications that were evaluated between May 4 and July 6, 2018, one eligible project proposed an individual grant award over $100,000. This project will install 0.37 miles of bikeways, and will reduce over 0.12 tons of NOx, ROG, and PM per year. Staff recommends the allocation of $242,000 in TFCA funds to this project. Attachment 1, Table 2, provides additional information on this project.

Attachment 4 lists the 83 eligible TFCA projects that were evaluated between July 1, 2017, and July 6, 2018. In total, these projects represent approximately $12.77 million in funds awarded, and will annually reduce approximately 36.8 tons of NOx, ROG, and PM and 25,352 tons of tailpipe greenhouse gas emissions. Approximately 27% of the TFCA funds have been awarded to projects in highly impacted Bay Area communities. Attachment 5 summarizes the allocation of TFCA funding for all eligible projects that have been evaluated since July 1, 2017, by project category (Figure 1), and county (Figure 2).

Request for Policy Waiver

The Town of Los Gatos recently applied for TFCA funding for a project (shown in Attachment 1, Table 2) that will construct a new 0.09-mile-long Class I bicycle path and upgrade an existing 0.28-mile-long Class II bicycle lane to a Class IV separated bikeway. While the project was cost-effective and met all other policy requirements, the FYE 2018 policies did not allow upgrades, so the City requested a policy waiver.

Staff has reviewed the project and determined that the upgrade improvement of the existing Class II bicycle lane could result in quantifiable and meaningful air quality benefits and this proposed project does conform to the provisions of HSC section 44241, and all other Board adopted policy requirements. Therefore, staff is requesting that the Board consider the waiver to allow the Town of Los Gatos' bikeway upgrade improvement project to be eligible for funding from the TFCA Regional Fund. In addition, this request is consistent with the updates to the recently Board adopted policies for FYE 2019, which expanded bicycle facility eligibility to allow upgrades.

BUDGET CONSIDERATION / FINANCIAL IMPACT

None. Through the CMP, MSIF, Community Health Protection Grant Program, and TFCA, the Air District distributes "pass-through" funds to public agencies and private entities on a reimbursement basis. Administrative costs for these and each of the new proposed funding programs are provided by each funding source.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Anthony Fournier and Michael Neward
Reviewed by: Karen Schkolnick, Anthony Fournier and Chengfeng Wang

Attachment 1: Projects with grant awards greater than $100,000
Attachment 2: CMP/MSIF and Community Health Protection Grant Program approved projects
Attachment 3: Summary of program distribution by county and equipment category CMP/MSIF and Community Health Protection Grant Program funding since 2009
Attachment 4: Summary of all TFCA approved and eligible projects (evaluated 7/1/17-7/6/18)
Attachment 5: Summary of distribution of TFCA funds by county and project category (evaluated 7/1/17-7/6/18)

AGENDA 3 - ATTACHMENT 1

Table 1 - Carl Moyer Program/ Mobile Source Incentive Fund, and Community Health Protection Grant Program projects with grant awards greater than $100k (Evaluated between 5/4/18 and 7/6/18)

Project #	Applicant name	Equipment Category	Project Description	Proposed contract award	Total project cost	Emission Reductions (Tons per year)			County
						NOx	ROG	PM	
19MOY99	Sonoma Soil Builders, Inc.	Ag/ off-road	Replacement of 1 diesel-powered loader	$ 154,520	$ 193,150	0.570	0.053	0.030	Sonoma
19MOY130	Jericho Canyon Vineyards, LLC	Ag/ off-road	Replacement of 2 diesel-powered tractors	$ 102,350	$ 127,986	0.301	0.049	0.036	Napa
19MOY134	Huneeus Vintners, LLC	Ag/ off-road	Replacement of 5 diesel-powered tractors	$ 197,875	$ 258,354	0.521	0.071	0.060	Napa
19MOY170	Robert McClelland Dairy	Ag/ off-road	Replacement of 1 diesel-powered tractor	$ 225,000	$ 283,026	0.797	0.077	0.042	Sonoma
19MOY162	Lind Marine, Inc.	Off-road	Replacement of 1 diesel-powered crane	$ 119,800	$ 140,996	0.612	0.057	0.035	Solano
19SBP61	Berkeley Unified School District	School bus	Replacement of 8 diesel powered school buses with gasoline buses	$ 644,384	$ 644,384	0.340	0.018	0.000	Alameda
20MOY6	Alameda-Contra Costa Transit District	On-road	Repalcement of 5 diesel transit buses with electric buses and charging infrastructure	$ 1,011,000	$ 6,475,000	0.305	0.005	0.002	Alameda
		7 Projects		$ 2,454,929	$ 8,122,896	3.445	0.329	0.204	

Table 2 - Summary of Transportation Fund for Clean Air projects with grant awards greater than $100k (Evaluated between 5/4/18 and 7/6/18)

Project #	Applicant name	Project Category	Project Description	Est. Weighted C/E	Proposed Contract Award	Emission Reductions (Tons per year)			County
						NO_X	ROG	PM	
18R18	Town of Los Gatos	Bicycle Facilcites	Install 0.09 miles of Class I and upgrade 0.28 miles of Class II to Class IV bikeways in Los Gatos	$ 248,726	$ 242,000	0.029	0.056	0.039	Santa Clara
			1 Project		$ 242,000	0.029	0.056	0.039	

AGENDA 3 - ATTACHMENT 2

CMP/MSIF and Community Health Protection Grant Program projects approved between 10/12/17 and 7/6/18

Project #	Equipment category	Project type	# of engines	Proposed contract award	Applicant name	Emission Reductions (Tons per year)			Board approval date	County
						NOx	ROG	PM		
19MOY13	Ag/ off-road	Equipment replacement	1	$ 51,224.00	Michael Viratos (Viratos Vineyards)	0.102	0.016	0.011	APCO	Solano
19MOY21	On-road	Equipment replacement	1	$ 40,000.00	Allied Materials, Inc	0.751	0.109	0.008	APCO	Solano
19MOY16	Ag/ off-road	Equipment replacement	1	$ 144,055.00	Achadinha Cheese, Inc.	1.189	0.114	0.062	12/20/2017	Sonoma
19MOY38	Locomotive	Equipment replacement	1	$ 1,080,500.00	Oakland Global Rail Enterprise	1.801	0.108	0.042	12/20/2017	Alameda
19MOY20	Ag/ off-road	Equipment replacement	1	$ 43,800.00	Bains Farms LLC	0.353	0.054	0.031	APCO	Solano
19MOY25	Ag/ off-road	Equipment replacement	1	$ 45,200.00	Donald Buhman (Farmer)	0.091	0.015	0.010	APCO	Napa
19MOY24	Off-road	Equipment replacement	1	$ 66,775.00	Dolan's Lumber of Concord	0.403	0.058	0.033	APCO	Contra Costa
19MOY14	On-road	Equipment replacement	1	$ 60,000.00	Simon Chuong dba Simon Trucking	1.126	0.170	0.008	APCO	Santa Clara
19MOY2	Marine	Engine replacement	1	$ 94,000.00	Lovely Martha Sportfishing	0.291	-0.009	0.018	APCO	San Francisco
19MOY10	Marine	Engine replacement	2	$ 134,800.00	El Dorado Deep Sea Adventure	1.513	-0.022	0.060	12/20/2017	Contra Costa
19MOY15	Marine	Engine replacement	1	$ 114,000.00	F/V Rose Marie Inc. (Commercial fishing)	0.254	-0.003	0.014	12/20/2017	San Francisco
19MOY1	Marine	Engine replacement	2	$ 735,000.00	Amnav Maritime Corporation (Vessel: Sandra Hugh)	14.327	0.095	0.591	12/20/2017	Alameda
19SBP49	School bus	School bus replacement	4	$ 496,459.22	San Jose Unified School District	0.480	0.047	0.000	12/20/2017	Santa Clara
19MOY4	Marine	Engine replacement	2	$ 735,000.00	Amnav Maritime Corporation (Vessel: Revolution)	14.327	0.095	0.591	12/20/2017	Alameda
19MOY11	Ag/ off-road	Equipment replacement	1	$ 41,110.00	Bob Balestra (Vineyard)	0.138	0.021	0.012	APCO	Solano
19MOY6	On-road	Equipment replacement	1	$ 50,000.00	J&G Transportaion	1.058	0.159	0.055	APCO	Alameda
19MOY35	On-road	Equipment replacement	1	$ 40,000.00	Manuel Portela Trucking	0.635	0.073	0.028	APCO	Santa Clara

AGENDA 3 - ATTACHMENT 2

Project #	Equipment category	Project type	# of engines	Proposed contract award	Applicant name	Emission Reductions (Tons per year)			Board approval date	County
						NOx	ROG	PM		
19MOY28	Ag/ off-road	Equipment replacement	1	$ 27,885.00	Scott T Murphy (Ranch/ farmer)	0.037	0.034	0.009	APCO	Sonoma
19MOY44	Ag/ off-road	Equipment replacement	2	$ 62,800.00	Willowbrook Stables LLC	0.039	0.034	0.011	APCO	Sonoma
19MOY43	On-road	Equipment replacement	1	$ 60,000.00	Khaira Trucking, LLC	1.297	0.196	0.000	APCO	Alameda
19MOY22	Marine	Engine replacement	1	$ 59,000.00	Flash Sport Fishing, DBA, Flash Sport Fishing	0.176	0.001	0.009	APCO	San Francisco
19MOY19	On-road	Equipment replacement	1	$ 60,000.00	G & C Trucking	1.032	0.138	0.045	APCO	Solano
19MOY39	Ag/ off-road	Equipment replacement	1	$ 20,270.00	Cabrillo Farms Agriculture, Inc	0.096	0.015	0.008	APCO	San Mateo
19MOY67	On-road	Equipment replacement	1	$ 60,000.00	Pawar Brothers Trucking	1.455	0.220	0.011	APCO	Santa Clara
19MOY36	On-road	Equipment replacement	1	$ 20,000.00	Guru Nanak Trucking	1.028	0.155	0.008	APCO	Alameda
19MOY70	On-road	Equipment replacement	1	$ 60,000.00	E.P.A Trucking LLC	0.894	0.119	0.039	APCO	San Mateo
19MOY48	Ag/ off-road	Equipment replacement	1	$ 18,500.00	Corona Vineyard Management LLC	0.065	0.010	0.007	APCO	Napa
19MOY42	Ag/ off-road	Equipment replacement	1	$ 51,700.00	Bains Farms LLC	0.335	0.044	0.025	APCO	Solano
19MOY47	Ag/ off-road	Equipment replacement	1	$ 247,240.00	William Y. Gil dba Grass Farm	1.041	0.050	0.026	2/21/2018	Santa Clara
19MOY7	Marine	Engine replacement	2	$ 140,000.00	Warrior Poet Sportfishing	0.679	0.011	0.026	2/21/2018	San Francisco
19MOY72	Off-road	Engine replacement	26	$ 2,084,200.00	Independent Construction, Co.	9.410	0.499	0.269	2/21/2018	Contra Costa
19SBP53	School bus	School bus replacement	4	$ 558,120.00	Fairfield-Suisun Unified School District	0.259	0.019	0.000	2/21/2018	Solano
19MOY59	Ag/ off-road	Equipment replacement	1	$ 179,200.00	Kabeela, Inc.	0.625	0.060	0.033	2/21/2018	Santa Clara
19SBP8	School bus	School bus replacement	2	$ 330,000.00	San Mateo Union High School District	0.195	0.017	0.000	3/7/2018	San Mateo

AGENDA 3 - ATTACHMENT 2

Project #	Equipment category	Project type	# of engines	Proposed contract award	Applicant name	Emission Reductions (Tons per year)			Board approval date	County
						NOx	ROG	PM		
19SBP86	School bus	School bus replacement	1	$ 165,000.00	San Lorenzo Unified School District	0.082	0.007	0.000	3/7/2018	Alameda
19MOY83	On-road	Equipment replacement	1	$ 40,000.00	Katakis Trucking	0.769	0.101	0.005	APCO	San Mateo
19SBP96	School bus	School bus replacement	2	$ 264,500.00	San Lorenzo Unified School District	0.132	0.010	0.000	4/4/2018	Alameda
19SBP58	School bus	School bus replacement	15	$ 2,018,169.00	Antioch Unified School District	1.302	0.105	0.000	4/4/2018	Contra Costa
19MOY84	Marine	Engine replacement	2	$ 274,000.00	Brian Collier (Charter fishing)	1.898	0.022	0.068	5/2/2018	San Francisco
19MOY68	Ag/ off-road	Equipment replacement	1	$ 321,300.00	Morrison Chopping	2.844	0.259	0.162	5/2/2018	Sonoma
19MOY90	Ag/ off-road	Equipment replacement	2	$ 77,700.00	Garvey Vineyard Management LLC	0.293	0.050	0.032	APCO	Napa
19MOY81	Marine	Engine replacement	2	$ 156,000.00	Tyler Butler (Commercial fishing)	0.768	-0.015	0.031	5/2/2018	San Mateo
19MOY92	Off-road	Equipment replacement	1	$ 165,160.00	L.H. Voss Materials	0.638	0.058	0.036	5/2/2018	Contra Costa
19MOY95	Off-road	Equipment replacement	1	$ 109,000.00	Bethel Island Municipal Improvement District	0.356	0.034	0.018	5/2/2018	Contra Costa
19MOY77	Ag/ off-road	Equipment replacement	1	$ 35,725.00	KM Vineyard Services	0.103	0.018	0.010	APCO	Alameda
19MOY94	Off-road	Equipment replacement	1	$ 175,200.00	DJNI Engineering, Inc.	0.835	0.076	0.048	5/2/2018	Santa Clara
19MOY109	Ag/ off-road	Equipment replacement	1	$ 36,500.00	Achadinha Cheese, Inc.	0.067	0.011	0.008	APCO	Sonoma
19MOY111	Ag/ off-road	Equipment replacement	1	$ 40,000.00	Michael Wolf Vineyard Services Inc.	0.053	0.004	0.005	APCO	Napa
19MOY112	Off-road	Equipment replacement	1	$ 297,425.00	Miller Milling Company	0.378	0.047	0.025	5/2/2018	Alameda
19MOY113	Ag/ off-road	Equipment replacement	1	$ 34,100.00	Schweiger Vineyards, Inc	0.067	0.012	0.008	APCO	Napa
19SBP79	School bus	School bus replacement	1	$ 137,845.00	San Carlos School Elementary School District	0.098	0.008	0.000	4/4/2018	San Mateo

AGENDA 3 - ATTACHMENT 2

Project #	Equipment category	Project type	# of engines	Proposed contract award	Applicant name	Emission Reductions (Tons per year)			Board approval date	County
						NOx	ROG	PM		
19MOY46	On-road	Equipment replacement	1	$ 40,000.00	Likers Logistic Inc.	0.534	0.040	0.003	APCO	Alameda
19MOY103	Marine	Engine replacement	2	$ 164,000.00	William Alexander (Commercial fishing)	1.063	0.019	0.040	5/2/2018	Sonoma
19MOY89	Ag/ off-road	Equipment replacement	1	$ 36,600.00	Winegrowers Farming Company	0.163	0.030	0.022	APCO	Napa
19MOY144	Off-road	Equipment replacement	1	$ 200,700.00	West Marin Compost	1.226	0.111	0.070	5/2/2018	Marin
19MOY108	Off-road	Equipment replacement	1	$ 170,000.00	JPW Development Co., LLC	0.243	0.032	0.018	5/2/2018	Solano
19MOY65	On-road	Equipment replacement	2	$ 78,000.00	Herrera & Sons Two, Inc. dba family towing	0.767	0.068	0.019	APCO	Santa Clara
19MOY146	Ag/ off-road	Equipment replacement	1	$ 37,300.00	Volker Eisele Family Estate LLC	0.052	0.013	0.008	APCO	Napa
19MOY17	On-road	Equipment replacement	1	$ 15,000.00	Shah Trucking	0.831	0.123	0.042	APCO	Alameda
19MOY116	Off-road	Equipment replacement	1	$ 148,100.00	Noah Concrete Corporation	0.463	0.061	0.042	5/2/2018	Santa Clara
19MOY117	Ag/ off-road	Equipment replacement	2	$ 113,200.00	KKG Equipment Company, LLC	0.229	0.024	0.019	5/2/2018	Napa
19MOY87	Off-road	Equipment replacement	7	$ 2,464,000.00	Hanson Aggregates Mid Pacific	11.142	0.637	0.375	5/2/2018	Contra Costa
19MOY136	Ag/ off-road	Equipment replacement	3	$ 124,700.00	Oak Knoll Farming Corp.	0.236	0.032	0.024	6/6/2018	Napa
19MOY145	Ag/ off-road	Equipment replacement	2	$ 155,700.00	Robert J Camozzi II	0.719	0.103	0.047	6/6/2018	Sonoma
19MOY120	Ag/ off-road	Equipment replacement	2	$ 102,000.00	Regusci Vineyard Management, Inc.	0.182	0.008	0.010	6/6/2018	Napa
19MOY121	Ag/ off-road	Equipment replacement	1	$ 33,000.00	Walter Hansel Winery & Vineyards LLC	0.045	0.004	0.006	APCO	Sonoma
19MOY122	Ag/ off-road	Equipment replacement	1	$ 36,600.00	Groth Vineyards and Winery LLC	0.072	0.013	0.009	APCO	Napa

AGENDA 3 - ATTACHMENT 2

Project #	Equipment category	Project type	# of engines	Proposed contract award	Applicant name	Emission Reductions (Tons per year)			Board approval date	County
						NOx	ROG	PM		
19MOY127	Ag/ off-road	Equipment replacement	1	$ 39,900.00	Kenefick Ranches LLC	0.125	0.022	0.016	APCO	Napa
19MOY131	Ag/ off-road	Equipment replacement	2	$ 28,600.00	Andrea Bartolucci dba Madonna Vineyard	0.074	0.013	0.009	APCO	Napa
19MOY132	Ag/ off-road	Equipment replacement	1	$ 44,000.00	Bisordi Ranch and Vineyard LLC	0.027	0.017	0.001	APCO	Sonoma
19SBP64	School bus	Equipment replacement	3	$ 461,416.00	San Mateo Foster City School District	0.325	0.007	0.000	6/6/2018	San Mateo
19MOY151	Ag/ off-road	Equipment replacement	1	$ 25,575.00	Rare Breed Farm	0.015	0.011	0.004	APCO	Sonoma
19MOY135	Ag/ off-road	Equipment replacement	1	$ 39,955.00	Kenzo Estate, Inc.	0.053	0.006	0.007	APCO	Napa
19MOY141	Ag/ off-road	Equipment replacement	1	$ 60,935.00	White Rock Vineyards, Inc.	0.129	0.016	0.011	APCO	Napa
19MOY149	Off-road	Equipment replacement	2	$ 57,800.00	ACE Hauling Inc.	0.126	0.032	0.026	APCO	San Francisco
19MOY101	Off-road	Equipment replacement	13	$ 5,011,500.00	SSA Terminals	43.377	2.435	0.174	6/6/2018	Alameda
19MOY138	Ag/ off-road	Equipment replacement	1	$ 21,790.00	Solano Foothill Vineyard, LLC	0.032	0.030	0.008	APCO	Solano
19MOY152	Off-road	Equipment replacement	6	$ 705,211.00	Sims Group USA dba Sims Metal Management	2.516	0.272	0.129	6/6/2018	Contra Costa
19MOY118	Marine	Engine replacement	1	$ 75,000.00	Mendler Brothers Fish LLC	0.150	0.002	0.006	APCO	Contra Costa
19MOY150	Ag/ off-road	Equipment replacement	1	$ 58,000.00	St. Supery Inc.	0.151	0.023	0.017	APCO	Napa
19MOY160	Off-road	Equipment replacement	40	$ 2,080,900.00	United Airlines, Inc.	3.177	0.410	0.260	6/6/2018	San Mateo
19MOY143	On-road	Equipment replacement	1	$ 60,000.00	G&G Trucking	1.049	0.158	0.008	APCO	Alameda
19MOY154a	On-road	Equipment replacement	1	$ 30,000.00	Ontrack Moving LLC	0.333	0.046	0.019	APCO	Alameda
19MOY154b	On-road	Equipment replacement	1	$ 40,000.00	Ontrack Moving LLC	0.489	0.077	0.030	APCO	Alameda

AGENDA 3 - ATTACHMENT 2

Project #	Equipment category	Project type	# of engines	Proposed contract award	Applicant name	Emission Reductions (Tons per year)			Board approval date	County
						NOx	ROG	PM		
19MOY154c	On-road	Equipment replacement	1	$ 40,000.00	Ontrack Moving LLC	0.445	0.068	0.027	APCO	Alameda
19MOY154d	On-road	Equipment replacement	1	$ 40,000.00	Ontrack Moving LLC	0.493	0.074	0.030	APCO	Alameda
19SBP52	School bus	Equipment replacement	1	$ 95,650.00	Castro Valley Unified School District	0.035	0.002	0.000	APCO	Alameda
19SBP91	School bus	Equipment replacement	1	$ 84,279.00	Redwood City School District	0.063	0.004	0.000	APCO	San Mateo
19MOY99	Ag/ off-road	Equipment replacement	1	$ 154,520.00	Sonoma Soil Builders, Inc.	0.570	0.053	0.030	TBD	Sonoma
19MOY119	Ag/ off-road	Equipment replacement	2	$ 89,920.00	Jaswant S. Bains	0.659	0.094	0.063	APCO	Solano
19MOY169	Ag/ off-road	Equipment replacement	2	$ 91,720.00	Walnut Grove Partnership	0.387	0.058	0.033	APCO	Solano
19MOY161	Ag/ off-road	Equipment replacement	2	$ 70,310.00	Capp Family Vineyards, Inc.	0.123	0.013	0.008	APCO	Napa
19MOY165	Ag/ off-road	Equipment replacement	1	$ 28,460.00	Washoe Valley Duck Farm	0.022	0.017	0.005	APCO	Sonoma
19MOY130	Ag/ off-road	Equipment replacement	2	$ 102,350.00	Jericho Canyon Vineyards, LLC	0.301	0.049	0.036	TBD	Napa
19MOY134	Ag/ off-road	Equipment replacement	5	$ 197,875.00	Huneeus Vintners, LLC	0.521	0.071	0.060	TBD	Napa
19MOY153	Ag/ off-road	Equipment replacement	1	$ 45,400.00	De Coninck Vineyards	0.164	0.009	0.010	APCO	Napa
19MOY155	Ag/ off-road	Equipment replacement	1	$ 16,450.00	Petersen Land Management, Inc.	0.031	0.022	0.006	APCO	Sonoma
19MOY170	Ag/ off-road	Equipment replacement	1	$ 225,000.00	Robert McClelland Dairy	0.797	0.077	0.042	TBD	Sonoma
19MOY162	Off-road	Equipment replacement	1	$ 119,800.00	Lind Marine, Inc.	0.612	0.057	0.035	TBD	Solano
19SBP61	School bus	Equipment replacement	8	$ 644,384.00	Berkeley Unified School District	0.340	0.018	0.000	TBD	Alameda
20MOY6	On-road	Equipment replacement	5	$ 1,011,000.00	Alameda-Contra Costa Transit District	0.305	0.005	0.002	TBD	Alameda
	101 Projects		**248**	**$ 28,175,062.22**		**144.166**	**9.113**	**4.418**		

Figure 1: CMP/MSIF and Community Health Protection Grant Program Funding Distribution by Equipment Category as of 7/6/18

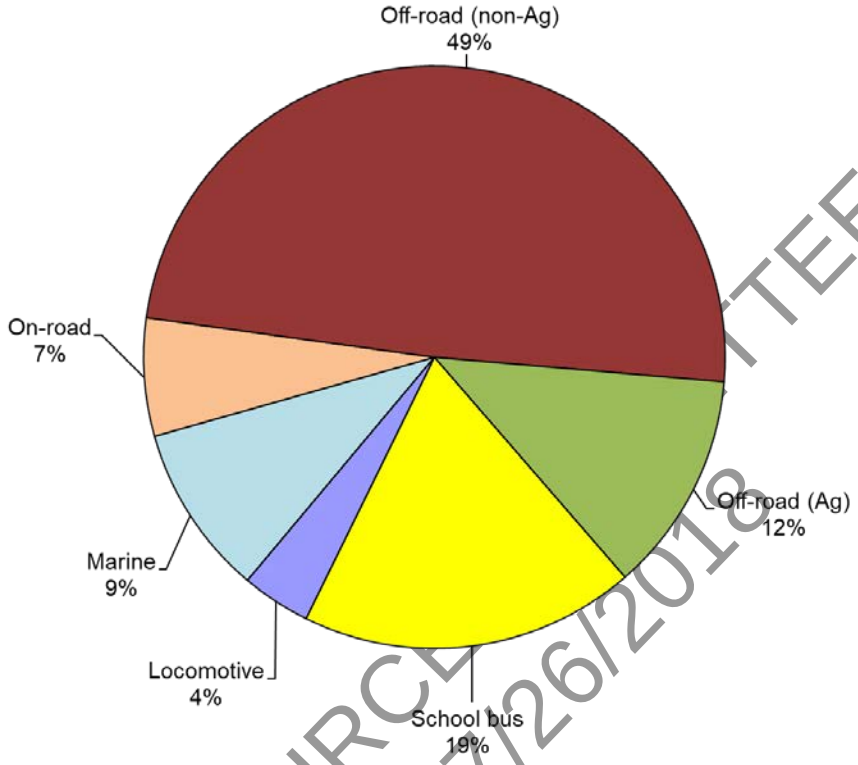
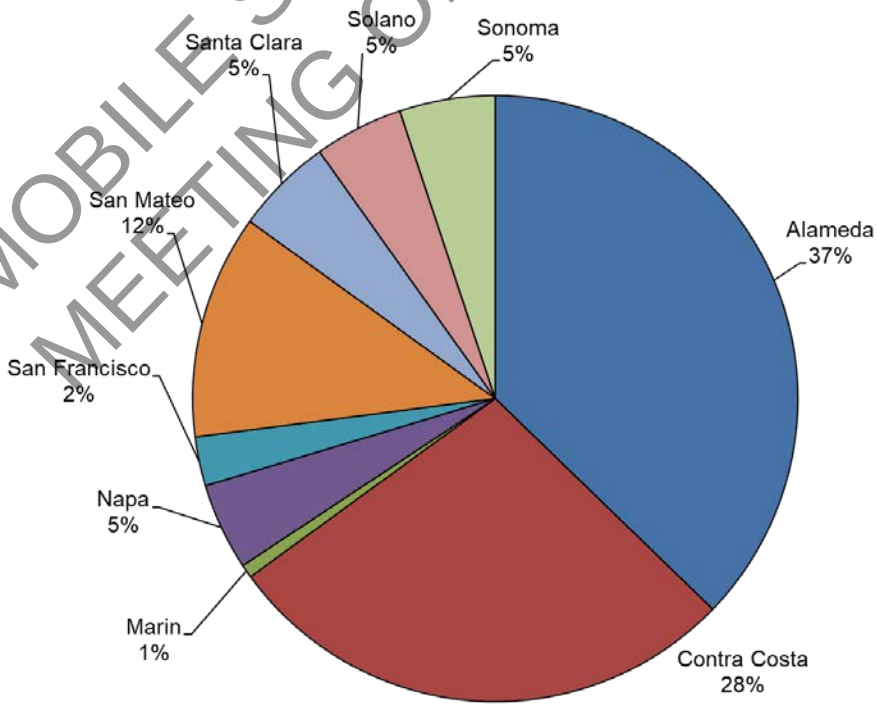


Figure 2: CMP/MSIF and Community Health Protection Grant Program Funding Distribution by County as of 7/6/18



AGENDA 3 - ATTACHMENT 3

Figure 3: CMP, MSIF, CHP funding since 2009 by equipment category

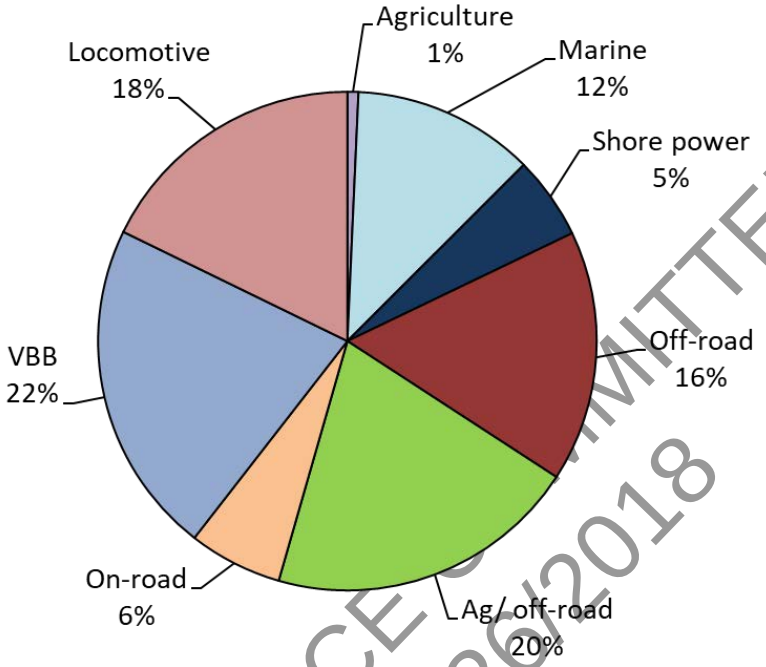
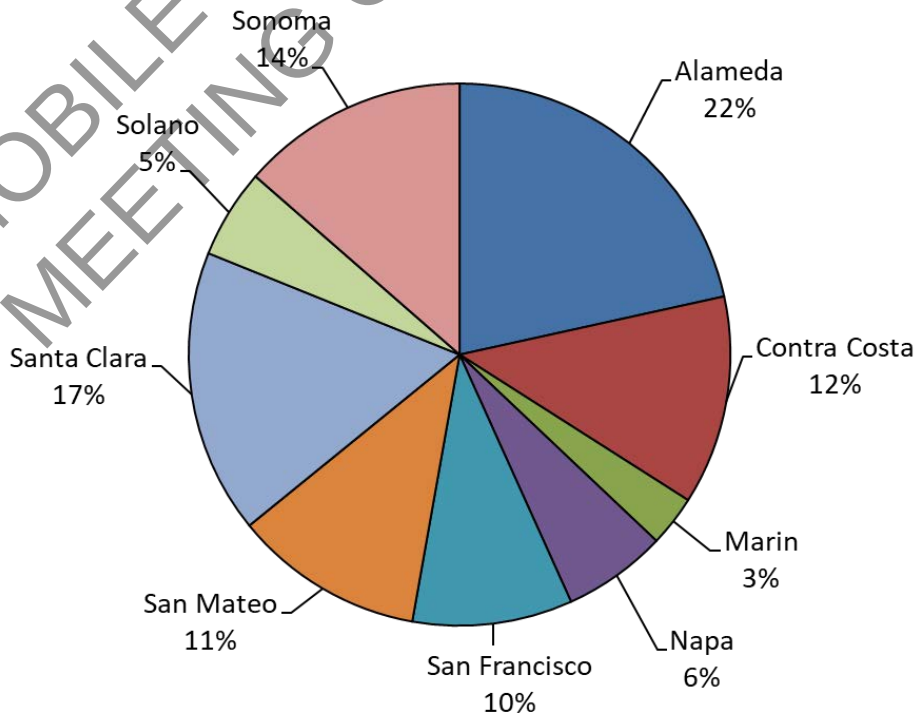


Figure 4: CMP, MSIF, CHP funding since 2009 by county



AGENDA 3 - ATTACHMENT 4

Summary of all TFCA approved and eligible projects (evaluated between 7/1/17 and 7/6/18)

Project #	Project Category	Project Description	Award Amount	Applicant Name	Emission Reductions (Tons per year)			Board Approval Date	CARE Area	County
					NO_X	ROG	PM			
Project Pending Board Approval										
18R18	Bicycle Facilities	Install 0.09 miles of Class I and upgrade 0.28 miles of Class II to Class IV bikeways in Los Gatos	$242,000	Town of Los Gatos	0.029	0.056	0.039	Pending	No	Santa Clara
Projects Approved										
17EV005	Electric Vehicle (EV) Charging Stations	Install and operate 5 single-port Level 2 (high) charging stations in Daly City, San Carlos, Menlo Park and Mountain View	$15,000	Concept Hotels	0.008	0.011	0.000	7/11/17	No	San Mateo / Santa Clara
17EV009	EV Charging Stations	Install and operate 4 dual-port Level 2 (low) charging stations in Menlo Park and Cupertino	$10,000	J Cyril Johnson Investment Corp	0.005	0.007	0.000	7/27/17	No	San Mateo / Santa Clara
17EV011	EV Charging Stations	Install and operate 3 dual-port Level 2 (high) charging stations in San Francisco	$10,936	San Francisco Zoological Society	0.006	0.008	0.000	8/3/17	No	San Francisco
17EV013	EV Charging Stations	Install and operate 4 dual-port Level 2 (high) charging stations in San Jose	$16,000	San Jose Healthcare System, LP	0.009	0.011	0.000	7/20/17	Yes	Santa Clara
17EV015	EV Charging Stations	Install and operate 14 dual-port Level 2 (high) charging stations in Santa Rosa and Petaluma	$56,000	Sonoma County Junior College District	0.030	0.040	0.001	7/6/17	No	Sonoma
17EV016	EV Charging Stations	Install and operate 6 dual-port Level 2 (low) charging stations in Hayward	$15,000	California State University, East Bay Foundation Inc.	0.008	0.011	0.000	7/18/17	No	Alameda
17EV018*	EV Charging Stations	Install and operate 182 single-port Level 2 (high) and 8 DC Fast charging stations with solar in Los Altos, Mountain View, and Los Altos Hills	$1,400,763	Los Altos School District	0.390	0.508	0.008	10/4/17	No	Santa Clara
17EV019	EV Charging Stations	Install and operate 3 dual-port Level 2 (high) chargers in San Jose	$12,000	Asian Americans for Community Involvement of Santa Clara Co. Inc.	0.007	0.009	0.000	8/28/17	Yes	Santa Clara
17EV020	EV Charging Stations	Install and operate 6 single-port Level 2 (high) charging stations in Los Altos Hills	$29,078	Fremont Hills Country Club	0.018	0.024	0.000	7/20/17	No	Santa Clara
17EV021	EV Charging Stations	Install and operate 52 single-port Level 2 (high) charging stations in San Jose	$156,000	North First SJ, LP	0.084	0.110	0.002	10/4/17	No	Santa Clara
17EV022	EV Charging Stations	Install and operate 26 single-port Level 2 (high) and 1 DC Fast charging stations in Los Altos	$96,000	Mountain View Los Altos High School District	0.056	0.073	0.001	10/4/17	No	Santa Clara
17EV023	EV Charging Stations	Install and operate 3 singe-port Level 2 (high) charging stations with solar in Richmond	$18,000	San Francisco Estuary Institute	0.005	0.006	0.000	8/15/17	Yes	Contra Costa
17EV024	EV Charging Stations	Install and operate 20 single-port Level 2 (high) charging stations with solar in Cotati	$120,000	Old Redwood Commons Association	0.033	0.042	0.001	10/4/17	No	Sonoma
17EV025	EV Charging Stations	Install and operate 3 dual-port Level 2 (high) charging stations in San Mateo	$12,000	BCSP Crossroads Property LLC	0.007	0.009	0.000	8/17/17	No	San Mateo
17EV026	EV Charging Stations	Install and operate 3 dual-port Level 2 (high) charging stations in Half Moon Bay	$12,000	City of Half Moon Bay	0.007	0.009	0.000	3/7/18	No	San Mateo
17EV027	EV Charging Stations	Install and operate 8 dual-port Level 2 (high) charging station in San Jose	$32,000	Santa Clara Valley Transportation Authority	0.017	0.023	0.000	10/11/17	Yes	Santa Clara
17EV029	EV Charging Stations	Install and operate 4 single-port Level 2 (high) charging stations in Albany	$12,000	City of Albany	0.007	0.009	0.000	11/13/17	Yes	Alameda
17EV031	EV Charging Stations	Install and operate 32 Level 2 (high) single port charging stations In Sunnyvale and Cupertino	$96,000	Fremont Union High School District	0.052	0.068	0.001	11/14/17	No	Santa Clara
17R18	Bicycle Facilities	Install 0.31 miles of Class II and 10.48 miles Class III bikeways in Daly City	$133,117	City of Daly City	0.071	0.093	0.138	10/4/17	No	San Mateo
17R19	Bicycle Facilities	Install 0.36 miles of Class IV bikeways in Half Moon Bay	$25,099	City of Half Moon Bay	0.003	0.004	0.006	9/13/17	No	San Mateo
17R20	Bicycle Facilities	Install 1.87 miles of Class II bikeways in Santa Rosa	$201,907	City of Santa Rosa	0.027	0.039	0.050	10/4/17	No	Sonoma
17R21	Bicycle Facilities	Install 1.7 miles of Class II and 7.8 miles of Class III bikeways in San Leandro	$139,128	City of San Leandro	0.030	0.040	0.059	10/4/17	Yes	Alameda
17R22	Bicycle Facilities	Install 3.05 miles of Class III bikeways in Redwood City	$29,206	City of Redwood City	0.004	0.005	0.007	9/13/17	No	San Mateo
17R23	Bicycle Facilities	Install 0.8 miles of Class I bikeway in Albany	$246,552	East Bay Regional Park District	0.030	0.040	0.059	10/4/17	Yes	Alameda
17R24	Bicycle Facilities	Install 7.76 miles of Class III and 0.7 miles of Class IV bikeways in Cupertino	$138,359	City of Cupertino	0.017	0.024	0.031	10/4/17	No	Santa Clara
17R26	Bicycle Facilities	Install 0.28 miles of Class I bikeway in San Carlos	$120,721	City of San Carlos	0.015	0.024	0.023	10/4/17	No	San Mateo
17R27	Bicycle Facilities	Install 20 electronic bicycle lockers in Richmond	$40,000	City of Richmond	0.005	0.007	0.009	9/13/17	Yes	Contra Costa
17R28	Bicycle Facilities	Install 104 electronic bicycle lockers in San Jose	$208,000	City of San Jose	0.026	0.037	0.048	10/4/17	Yes	Santa Clara
17R29	Bicycle Facilities	Install 40 electronic bicycle lockers in San Francisco	$100,000	San Francisco Municipal Transportation Agency	0.014	0.019	0.028	9/13/17	Yes	San Francisco

AGENDA 3 - ATTACHMENT 4

Summary of all TFCA approved and eligible projects (evaluated between 7/1/17 and 7/6/18)

Project #	Project Category	Project Description	Award Amount	Applicant Name	Emission Reductions (Tons per year)			Board Approval Date	CARE Area	County
					NO_X	ROG	PM			
17R30	Bicycle Facilities	Install 16 electronic bicycle lockers in Oakland	$36,000	City of Oakland	0.005	0.007	0.009	9/13/17	Yes	Alameda
17R31	Bicycle Facilities	Install 74 bicycle racks and 8 electronic bicycle lockers in Fremont	$21,550	City of Fremont	0.006	0.008	0.011	9/13/17	No	Alameda
17R32	Bicycle Facilities	Install 171 bicycle racks in Palo Alto	$12,825	Palo Alto Unified School District	0.012	0.016	0.016	9/13/17	No	Santa Clara
18EV001	EV Charging Stations	Install and operate 244 Level 2 (high) single-port charging stations in San Jose, Campbell, and Saratoga	$732,000	Campbell Union High School District	0.396	0.516	0.008	12/20/17	No	Santa Clara
18EV002	EV Charging Stations	Install and operate 5 dual-port Level 2 (high) charging stations in Mountain View and South San Francisco	$15,000	HCP, Inc.	0.008	0.011	0.000	3/14/18	No	San Mateo / Santa Clara
18EV004	EV Charging Stations	Install and operate 4 dual-port level 2 (high) charging stations at 2 workplace facilities in San Jose	$16,000	San Jose Water Company	0.009	0.011	0.000	6/6/18	Yes	Santa Clara
18EV005	EV Charging Stations	Install and operate 2 dual-port Level 2 (high) and 1 single-port Level 2 (high) charging stations in Napa	$11,000	Napa County Superintendent of Schools	0.006	0.008	0.000	1/3/18	No	Napa
18EV006	EV Charging Stations	Install and operate 1 dual-port level 2 (high) and 1 DC Fast charging stations in Emeryville	$29,000	City of Emeryville	0.016	0.020	0.000	1/10/18	Yes	Alameda
18EV008	EV Charging Stations	Install and operate 20 dual-port Level 2 (high) charging stations in Pleasant Hill, San Pablo, San Ramon, and Pittsburg	$80,000	Contra Costa Community College District	0.043	0.056	0.001	2/28/18	Yes	Contra Costa
18EV009	Electric Vehicle (EV) Charging Stations	Install and operate 72 dual-port Level 2 (low) charging stations with solar in San Francisco	$267,000	City and County of San Francisco	0.097	0.127	0.002	6/6/18	No	San Francisco
18EV010	EV Charging Stations	Install and operate 5 dual-port level 2 (high) charging stations in Milpitas	$20,000	Sonicwall Inc	0.011	0.014	0.000	1/17/18	No	Santa Clara
18EV011	EV Charging Stations	Install and operate 24 single-port level 2 (high) charging stations in San Jose	$72,000	Vocera Communications, Inc.	0.039	0.051	0.001	11/22/17	Yes	Santa Clara
18EV013	EV Charging Stations	Install and operate 3 dual-port Level 2 (high) charging stations at 1 workplace facility in Fairfield	$12,000	Solano Community College District	0.007	0.009	0.000	4/4/18	No	Solano
18EV014	EV Charging Stations	Install and operate 32 single-port level 2 (high) charging stations in San Jose	$96,000	The Harker School	0.052	0.068	0.001	1/17/18	No	Santa Clara
18EV016	EV Charging Stations	Install and operate 8 single-port Level 2 (high) and 2 dual-port Level 2 (low) with solar at 3 multi-dwelling unit facilities in East Palo Alto, Danville, and Vallejo.	$56,000	GRID Alternatives	0.016	0.020	0.000	4/11/18	Yes	San Mateo / Contra Costa / Solano
18EV017	EV Charging Stations	Install and operate 74 single-port Level 2 (high) and 5 DC Fast charging stations with solar in Palo Alto	$500,000	Palo Alto Unified School District	0.161	0.210	0.003	5/2/18	No	Santa Clara
18EV018	EV Charging Stations	Install and operate 10 single-port Level 2 (high) charging stations at 1 workplace facility in Los Altos	$30,000	Los Altos Fields, LLC	0.016	0.021	0.000	4/4/18	No	Santa Clara
18EV020	EV Charging Stations	Install and operate 16 dual-port level 2 (high) charging stations at 4 destination facilities in San Francisco	$64,000	University of California San Francisco	0.035	0.045	0.001	6/5/18	No	San Francisco
18EV021	EV Charging Stations	Install and operate 14 dual-port and 3 single-port Level 2 (high) charging stations in San Rafael	$65,000	County of Marin	0.035	0.046	0.001	3/14/18	No	Marin
18EV022	EV Charging Stations	Install and operate 1 dual-port Level 2 (high) and 1 DC Fast charging stations at 1 transportation corridor facility in Colma	$29,000	Town of Colma	0.016	0.020	0.000	4/12/18	No	San Mateo
18EV023	EV Charging Stations	Install and operate 24 single-port Level 2 (high) charging stations at 1 workplace facility in Burlingame.	$72,000	NABI LLC	0.039	0.051	0.001	4/12/18	No	San Mateo
18EV025	EV Charging Stations	Install and operate 2 dual-port Level 2 (high) and 1 DC Fast at 1 transportation corridor facility in Newark	$33,000	DTP-LV Associates, LLC	0.018	0.023	0.000	4/12/18	No	Alameda
18EV026	EV Charging Stations	Install and operate 3 dual-port Level 2 (high) charging stations at 1 workplace facility in San Jose.	$12,000	Cupertino Electric, Inc.	0.007	0.009	0.000	6/6/18	No	Santa Clara
18EV027	EV Charging Stations	Install and operate 7 dual-port Level 2 (high) charging stations at 1 destination facility in Oakland.	$28,000	City of Oakland	0.015	0.020	0.000	6/6/18	Yes	Alameda
18EV028	EV Charging Stations	Install and operate 25 dual-port Level 2 (high) charging stations with solar in Alameda and Oakland	$130,000	Peralta Community College District	0.054	0.071	0.001	5/2/18	Yes	Alameda
18EV030	EV Charging Stations	Install and operate 150 single-port Level 2 (high) and 5 DC Fast charging stations in San Jose	$500,000	East Side Union High School District	0.282	0.368	0.005	5/2/18	Yes	Santa Clara
18EV031	EV Charging Stations	Install and operate 5 dual-port Level 2 (high) charging stations at 1 destination facility in San Francisco.	$20,000	The Ignatian Corporation	0.011	0.014	0.000	5/28/18	No	San Francisco

AGENDA 3 - ATTACHMENT 4

Summary of all TFCA approved and eligible projects (evaluated between 7/1/17 and 7/6/18)

Project #	Project Category	Project Description	Award Amount	Applicant Name	Emission Reductions (Tons per year)			Board Approval Date	CARE Area	County
					NO_X	ROG	PM			
18EV033	EV Charging Stations	Install and operate 8 dual-port level 2 (high) charging stations at 1 workplace facility in San Leandro	$32,000	2000 Marina LLC	0.017	0.023	0.000	6/6/18	Yes	Alameda
18EV034	EV Charging Stations	Install and operate 150 single-port Level 2 (high) and 5 DC Fast charging stations in San Jose	$500,000	San Jose Unified School District	0.282	0.368	0.005	5/2/18	Yes	Santa Clara
18EV037	EV Charging Stations	Install and operate 44 single port level 2 (high) and 6 DC Fast charging stations in Cupertino and San Jose	$199,500	Fremont Union High School District	0.122	0.159	0.002	5/2/18	No	Santa Clara
18EV039	EV Charging Stations	Install and operate 144 single-port Level 2 (high) and 4 DC Fast charging stations in Saratoga and Santa Clara	$500,000	West Valley-Mission Community College District	0.286	0.372	0.005	5/2/18	No	Santa Clara
18EV040	EV Charging Stations	Install and operate 26 single-port level 2 (high) charging stations at 2 workplace facilities in Milpitas and Redwood City	$78,000	Clean Fuel Connection, Inc.	0.042	0.055	0.001	5/2/18	No	San Mateo / Santa Clara
18EV041	EV Charging Stations	Install and operate 144 single-port Level 2 (high) and 4 DC Fast charging stations in Cupertino and Los Altos Hills	$500,000	Foothill De-Anza Community College District	0.286	0.372	0.005	5/2/18	No	Santa Clara
18EV042	EV Charging Stations	Install and operate 1 DC Fast (65 kW) charging station at 1 workplace facility in San Jose	$18,000	NIO USA, Inc	0.014	0.018	0.000	5/28/18	No	Santa Clara
18EV044	EV Charging Stations	Install and operate 3 Level 2 (high) and 1 DC Fast charging stations at 1 destination facility in Oakland.	$30,000	Chabot Space & Science Center Foundation	0.020	0.026	0.000	6/1/18	No	Alameda
18EV045	EV Charging Stations	Install and operate 1 single-port and 2 dual-port Level 2 (high) charging stations at 2 destination facilities in Dublin	$11,000	City of Dublin	0.006	0.008	0.000	5/9/18	Yes	Alameda
18EV048	EV Charging Stations	Install and operate 12 dual-port Level 2 (high) charging stations at 3 workplace facilities in San Jose, Livermore, and Walnut Creek.	$48,000	Caltrans	0.026	0.034	0.001	5/28/18	No	Santa Clara / Alameda / Contra Costa
18EV051	EV Charging Stations	Install and operate 4 dual-port Level 2 (high) charging stations at 1 workplace facility in Santa Clara.	$16,000	Santa Clara Towers LLC	0.009	0.011	0.000	5/28/18	No	Santa Clara
18EV052	EV Charging Stations	Install and operate 5 Level 2 (high) charging stations at 5 destination facilities in Dublin.	$20,000	Dublin Crossing LLC	0.011	0.014	0.000	5/22/18	Yes	Alameda
18EV055	EV Charging Stations	Install and operate 1 single-port Level 2 (low) and 1 DC Fast charging stations with solar at 1 transportation corridor facility in Sausalito.	$46,000	Intertie, Incorporated	0.014	0.019	0.000	6/6/18	No	Marin
18EV057	EV Charging Stations	Install and operate 1 dual-port Level 2 (high) and 1 single-port Level 2 (high) charging stations and a 265 kW solar array at 1 destination facility in San Rafael.	$13,000	City of San Rafael	0.004	0.005	0.000	6/6/18	No	Marin
18R05	Rideshare Services	SJSU Ridesharing & Trip Reduction	$140,000	Associated Students, San Jose State University	0.808	0.920	1.282	11/1/17	Yes	Regional
18R06	Shuttle Services	ACE Shuttle 53 and 54	$80,000	San Joaquin Regional Rail Commission	0.331	0.390	0.629	10/3/17	Yes	Alameda
18R07	Shuttle Services	ACE Shuttle Bus Program	$960,000	Santa Clara Valley Transportation Authority	2.455	2.508	4.222	11/1/17	Yes	Santa Clara
18R09	Shuttle Services	PresidiGo Downtown Shuttle	$100,000	Presidio Trust	0.213	0.267	0.364	10/3/17	Yes	San Francisco
18R10	Shuttle Services	Caltrain Shuttle Program	$612,100	Peninsula Corridor Joint Powers Board	1.539	1.832	2.641	11/1/17	No	San Mateo / Santa Clara
18R11	Rideshare Services	511 Regional Vanpool & Carpool Program	$991,000	Metropolitan Transportation Commission	0.802	1.783	3.507	11/1/17	Yes	Regional
18R12	Shuttle Services	Emery Go-Round Shuttle	$238,819	City of Emeryville	0.233	0.270	0.415	11/1/17	Yes	Alameda
18R13	Bicycle Facilities	Install 0.8 miles of Class I and 0.1 miles of Class IV bikeways in Alameda	$138,560	City of Alameda	0.017	0.022	0.033	6/6/18	Yes	Alameda
18R15	Bicycle Facilities	Install 0.87 miles of Class I bikeway in San Rafael	$248,400	City of San Rafael	0.030	0.039	0.060	6/6/18	Yes	Marin
18R16	Bicycle Facilities	Install 0.78 of Class II and 0.72 of Class III bikeways in South San Francisco	$120,106	City of South San Francisco	0.027	0.036	0.053	6/6/18	No	San Mateo
18R17	Bicycle Facilities	Install 0.45 miles of Class I bikeway in Rodeo	$138,669	East Bay Regional Park District	0.017	0.022	0.033	6/6/18	No	Contra Costa
18R19	Bicycle Facilities	Install 0.45 miles of Class I bikeway in Larkspur	$283,637	Transportation Authority of Marin	0.035	0.045	0.069	6/6/18	No	Marin
	83 Projects		**$12,765,031**		**10.075**	**12.817**	**13.905**			

*The award for Project #17EV018 includes $99,900 of funds from the California Energy Commission (CEC). The TFCA award for this project is $1,300,863.

AGENDA 3 - ATTACHMENT 5

Summary of TFCA funds distributed by county and project category
(between 7/1/17 and 7/6/18)

Figure 1: TFCA Projects Awarded
Distributed by Project Category

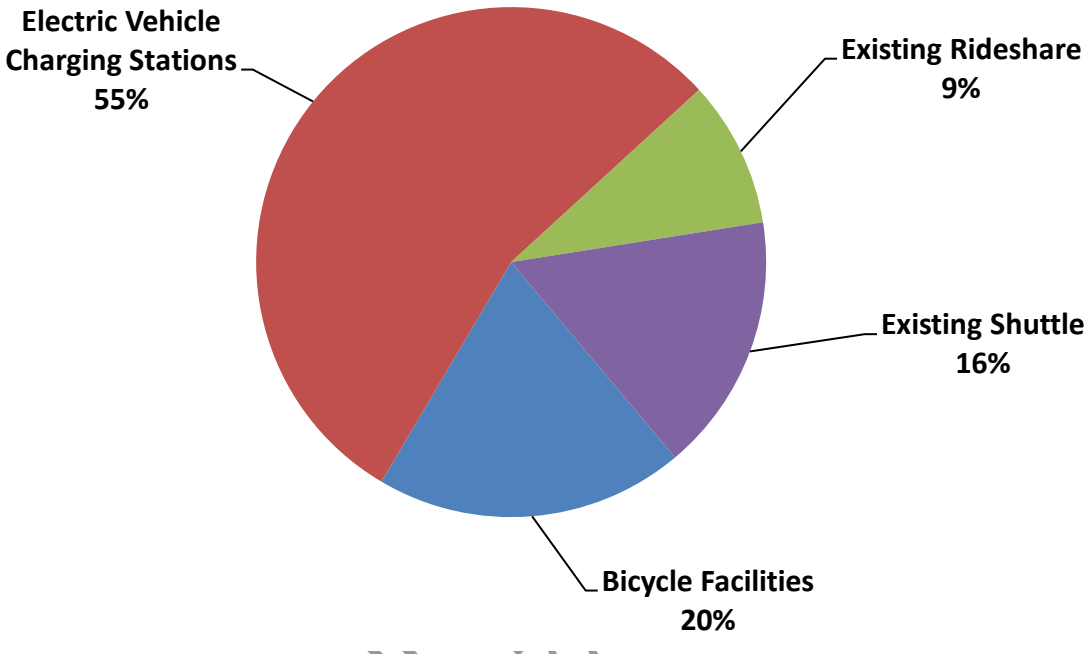
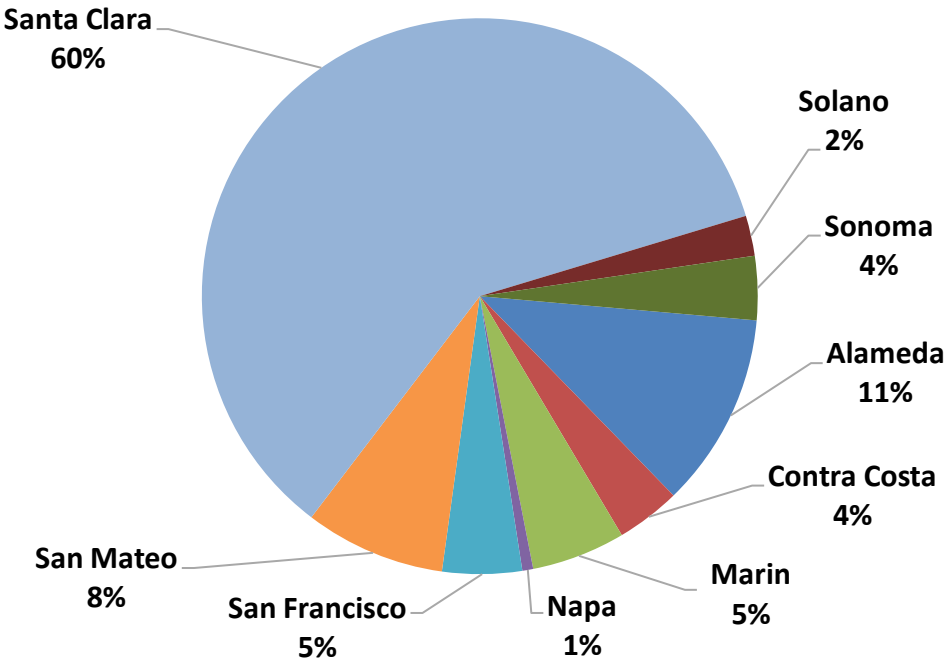


Figure 2: TFCA Projects Awarded
Distributed by County



BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Scott Haggerty and Members of the Mobile Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 16, 2018

Re: Approval of Contract for Clean Cars for All Program Case Managers

RECOMMENDED ACTION

Recommend to the Board of Directors:

1. Authorize the Executive Officer/APCO to execute a contract with GRID Alternatives at a cost not to exceed $250,000 for services performed in Fiscal Year Ending (FYE) 2018 and FYE 2019.

BACKGROUND

In March 2018, the Air District and California Air Resources Board (ARB) finalized an agreement to implement the Clean Cars for All Program in the Bay Area. Clean Cars for All provides incentives for low income households (up to 400% of the Federal Poverty Level) in disadvantaged communities to retire older, high-polluting vehicles and replace them with a newer, cleaner vehicle or with alternative transportation options (e.g. Clipper card). Eligible vehicles for purchase or lease include hybrid electric, plug-in hybrid, or electric vehicles.

By replacing older, higher-emitting vehicles and replacing them with cleaner cars or alternative transportation options, this program will reduce criteria pollutants in disadvantaged communities throughout the Bay Area. Clean Cars for All also supports the Bay Area and California's goals for reductions in greenhouse gas emission (80% below 1990 levels by 2050) and zero-and near-zero emission vehicle deployment (90% of the Bay Area passenger vehicles by 2050 and 5 million vehicles statewide by 2030).

The agreement with ARB provides $5M for the two-year program, 5% of which may be used to subcontract with third party entities to address issues associated with participation of low-income consumers in disadvantaged communities. Air District staff are setting up the program components that are needed to open the program to the public, including:

- Application system and website;
- Case managers to support applicants through the application and incentive process;
- Partnerships with dealers, vehicle scrappers, and alternative transportation programs; and
- Materials for stakeholder engagement and outreach to disadvantaged communities.

The Air District issued a Request for Proposals (RFP) for Case Managers to support Clean Cars for All on April 3, 2018. The RFP provides up to $250,000 to provide one-on-one assistance and support to eligible consumers that apply to the Clean Cars for All Program. Two proposals were received by the May 17, 2018 deadline from GRID Alternatives and Opus Inspection, Inc.

Based on the review process and scores outlined in Attachment 1, staff is recommending GRID Alternatives for a contract not to exceed $250,000 to be case managers for Clean Cars for All in FYE 2019 and FYE 2020.

BUDGET CONSIDERATION/FINANCIAL IMPACT

Funding for this GRID Alternatives contract comes from a $5M grant from the California Air Resources Board and is supported by the "California Climate Investments" (CCI) program.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Tin Le
Reviewed by: Ranyee Chiang

Attachment 1: Summary of Clean Cars for All Request for Proposals and Review

Summary of Clean Cars for All Request for Proposals and Review

Two proposals were received in response to the Request for Proposals (RFP) for Case Managers to support Clean Cars for All from GRID Alternatives and Opus Inspection, Inc.
A panel of four Air District staff, from the Technology Implementation Office, Strategic Incentives Division and Community Engagement Office, and one community representative performed a thorough evaluation of proposals based on the following criteria:

- Expertise – Expertise and experience of the organization and personnel assigned to RFP tasks; organization's ability to perform and complete the work in a professional and timely manner.
- Approach – Responsiveness of the proposal, based upon a clear understanding of the work to be performed, related challenges, and plans to mitigate those challenges.
- Cost – Cost or cost effectiveness and resource allocation strategy, including completeness and level of detail in budget, percent of administrative and overhead costs, and whether there is cost-share.
- Conflicts of Interest – Conflicts of interest are addressed.
- Organization's Specialty Focus Area – Local organizations headquartered in the Air District's jurisdiction and those that are certified as green businesses by a local government agency or independent private rating organization.

The panelists average scores are summarized in Table 1 below:

Table 1. Scoring of Proposals

Criteria	Total Points Possible	GRID Alternatives	Opus Inspection, Inc.
Expertise	30	24.2	21.6
Approach	30	24.4	18.6
Cost	30	25	17.8
Conflicts of Interests	5	4.4	5
Organization's Specialty Focus Area	5	2.5	0
Total points	100	80.5	63

GRID Alternatives received the highest combined score of 80.5 for their proposal.

GRID alternatives, headquartered in Oakland, is the country's largest nonprofit providing clean energy solutions to low-income families. GRID has over 10 years of experience providing multilingual and multicultural case management support for various grant programs in the Bay Area. Panelists noted that the strengths of this proposal included expertise in working with low income consumers in disadvantaged communities in the Bay Area, a thoughtful approach that included anticipated challenges and mitigation strategies, and a cost proposal that included significant cost sharing.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Director Haggerty and Members of the Mobile Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 12, 2018

Re: New Grant Program Revenues and Request to Increase Staffing in the Strategic Incentives Division

RECOMMENDED ACTION

Recommend Board of Directors:

1. Authorize the Bay Area Air Quality Management District (Air District) to accept, obligate, and expend up to $130 million in funding from the Volkswagen Environmental Mitigation Trust (VW Trust) and $1,160,311 in funding from the United States Environmental Protection Agency; and amend the Fiscal Year Ending (FYE) 2019 budget to account for this new funding;

2. Authorize the Executive Officer/APCO to enter into all agreements necessary to accept, obligate, and expend this funding; and

3. Authorize the creation of six additional full-time equivalent (FTE) positions in the Strategic Incentives Division.

BACKGROUND

Since 1992, the Air District's Strategic Incentives Division (SID) has administered grant funding designed to help accelerate the adoption of cleaner vehicles and equipment to support the Air District's mission of improving air quality, and protecting public health and the global climate. The recently adopted fiscal year ending 2019 FYE 2019 budget contemplated that over $100 million in grant funding will be awarded by the Air District to support projects that improve air quality in the Bay Area, with most of this funding being prioritized for projects located in communities that experience disproportionately higher concentrations of air pollution.

In California, the California Air Resources Board (ARB) has been designated as Lead Agency to act on the State's behalf in implementing California's allocation of the VW Environmental Mitigation Trust (VW Trust). On May 25, 2018, the ARB approved the Beneficiary Mitigation Plan (Plan) which through the VW Trust will provide about $423 million for projects in California to mitigate the excess nitrogen oxide (NOx) emissions caused by VW's use of illegal defeat devices in certain diesel vehicles.

The United States Environmental Protection Agency (US EPA) Clean Diesel Program provides support for projects that protect human health and improve air quality by reducing harmful emissions from diesel engines. This program includes grants and rebates funded under the Diesel Emissions Reduction Act (DERA).

DISCUSSION

Since the adoption of the FYE 2019 budget, the Air District has learned that it will be awarded additional funding, which may increase its estimated revenue to over $130 million in FYE 2019. Table 1 below shows the revised total estimated incentive revenue for FYE 2019 by program.

Table 1: Estimates of Incentive Revenue in FYE 2019

Funding Source	Funding Amount in Millions (M)
Carl Moyer Program (CMP)	$9 M
Community Air Protection Program (AB 134/617)	$50 M
Mobile Source Incentive Fund (MSIF)	$13 M
Transportation Fund for Clean Air (TFCA)	$25 M
*Volkswagen NOx Mitigation Funds	$30 M
Other Funding (Federal, state, and settlement funds)	$5 M
Total	**~$132 M**

** Total Volkswagen NOx mitigation funding is $423M statewide. The funding allocation for this chart assumes 33% of funding will be awarded to eligible Bay Area and Northern California based projects. Project funding is projected to be dispersed over a 4- to 6-year period and administrative funding is estimated over a 10-year period.*

The following sections provide additional background on two new sources of program funding that staff wishes the Board of Directors to consider accepting:

VW Trust Program Funding

The VW Trust funding will provide funding opportunities for settlement specified eligible actions that are focused mostly on "scrap and replace" projects for the heavy-duty sector, including on-road freight trucks, transit and shuttle buses, school buses, forklifts and port cargo handling equipment, commercial marine vessels, and freight switcher locomotives. CARB staff estimates the Plan's funding actions in aggregate will reduce about 10,000 tons of NOx statewide over a 10-year period.

The incentive programs described in the Plan and the VW Trust funding is proposed be administered on a statewide basis by three air districts including: Bay Area, South Coast Air Quality Management District, and San Joaquin Valley Air Pollution Control District.

The types of solicitations (Mitigation Actions/Project Categories) and solicitations which would be assigned to the Bay Area Air District are bolded in Table 1 below.

Table 2: Summary of VW Plan mitigation actions, funding, and lead air district

Mitigation Action/Project Category	Project Funding Allocation (in millions)*	Lead Air District
Zero-Emission Transit, School, and Shuttle Buses	$130	San Joaquin
Zero-Emission Class 8 Freight and Port Drayage Trucks	$90	South Coast
Zero-Emission Freight and Marine Projects	**$70**	**Bay Area**
Combustion Freight and Marine Projects	$60	South Coast
Light-Duty Zero-Emission Vehicle Infrastructure	**$10**	**Bay Area**
Total	**$360**	

* *Approximately $63 million in funding has been placed in reserves by the Air Resources Board for administration costs.*

If the Committee choose to accept this funding, staff would return to the Board on a quarterly basis to provide a status update on this program, which is anticipated to run at least ten years.

US EPA Fiscal Year 2018 Clean Diesel Funding Assistance Program Funding (DERA)

In April 2018, the US EPA issued a solicitation for DERA's Clean Diesel Funding Assistance Program funding. In May 2018, the Air District applied for $1,160,311 in DERA funds for a project that proposed to help replace six non-road material handlers with one zero-emission electric unit and five Tier 4 Final diesel units operating in goods movement service in the communities of Richmond and Hayward. The Air District selected this project because it is highly cost-effective and achieves significant emission reductions in two highly impacted Bay Area communities. Acceptance of this funding requires a resolution of the Air District Board's authorizing the Air District's participation.

Request for New Staff

Currently, the SID has two managers, each who oversees the administration of approximately $30-$50 million in new incentive revenue annually. In order to administer VW Trust funding, it is envisioned that this new work would need to be overseen by a new team. Given the amount of work that is anticipated in this new program, staff is seeking Board approval of six new FTEs including: *1 Air Quality Program Manager, 1 Senior Staff Specialist, and 4 Staff Specialists.*

The duties and responsibilities required of grant funding administration include: drafting proposed funding policies and guidance; soliciting and evaluating applications for funding from public agencies and private entities; developing funding agreements; tracking project progress by reviewing project sponsors' reports; processing payment requests; assisting with audits and conducting on-site inspections; applying for additional grant revenue from federal, state, and other sources; participating in collaborative workgroups and technical studies; and conducting public education and outreach.

In addition to the work described above, it is also envisioned that the three air districts would need to procure professional services for certain specialized work that requires statewide coordination such as: development and on-going support for websites, database and online grants management tool(s), promotional campaign materials that would be used by air district staff for outreach, and other services such as meeting facilitation.

BUDGET CONSIDERATION / FINANCIAL IMPACT

None. Administrative costs for these programs will be provided by each funding source. The additional revenue from these funds and from the Air District's current allocation of general funds is anticipated to cover the cost of the additional six new FTEs. Funding for this program spans a 10 year period and staff anticipates it will be able to manage program ramp down through its normal attrition process.

Respectfully Submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Karen Schkolnick
Reviewed by: Damian Breen

Attachment 1: Board Resolution for $1,160,311 in EPA-DERA Funds

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

RESOLUTION No. 2018 - _____

A resolution authorizing the Bay Area Air Quality Management District to accept, obligate, and expend $1,160,311 in funding from the U.S. Environmental Protection and to authorize the Executive Officer/Air Pollution Control Officer to execute all necessary agreements, required documents, and amendments required to expend this funding.

WHEREAS, the purpose of this Resolution is to authorize the Bay Area Air Quality Management District ("Air District") to accept, obligate, and expend up to $1,160,311 in funding from the U.S. Environmental Protection Agency ("EPA") and to authorize the Executive Officer/Air Pollution Control Officer to execute all necessary agreements, required documents, and amendments required to expend this funding;

WHEREAS, on or around April 24, 2018, the US EPA issued a Request for Proposals (RFP) for the Diesel Emission Reduction Act (DERA) Fiscal Year 2018 Clean Diesel Funding Assistance Program soliciting applications from eligible entities for projects that achieve significant reductions in diesel emissions in terms of tons of pollution produced by diesel engines and diesel emissions exposure, particularly from fleets operating at or servicing goods movement facilities located in areas designated as having poor air quality;

WHEREAS, on or around May 30, 2018, the Air District submitted a proposal to the EPA for a project that proposed to help replace six non-road material handlers with one zero-emission electric unit and five Tier 4 Final diesel units operating in goods movement service in the communities of Richmond and Hayward;

WHEREAS, on July 11, 2018, the Air District received a letter from the EPA informing the Air District of a $1,160,311 award for the proposed project;

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors hereby approves the District's acceptance of EPA funds, and commits the District to comply with the EPA DERA project requirements; and

BE IT FURTHER RESOLVED, the Executive Officer/Air Pollution Control Officer to accept, obligate, and execute all agreements, required documents, and any amendments thereto.

The foregoing resolution was duly and regularly introduced, passed and adopted at a regular meeting of the Board of Directors of the Bay Area Air Quality Management District on the Motion of Director _____, seconded by Director _____, on the ____ day of _____, 2018 by the following vote of the Board:

AYES:

NOES:

ABSTAIN:

ABSENT:

_____
David E. Hudson
Chair of the Board of Directors

ATTEST:

_____
Rod Sinks
Secretary of the Board of Directors

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 25, 2018

Re: Report of the Stationary Source Committee Meeting of July 30, 2018

RECOMMENDED ACTION

The Stationary Source Committee (Committee) will receive only informational items and has no recommendations of approval by the Board of Directors.

BACKGROUND

The will Committee meet on Monday, July 30, 2018, and will receive the following reports:

A) Air Pollution Complaint Process Overview;

B) Overview of Regulation 7: Odorous Substance Rule Amendment Concepts; and

C) Update on Implementation of AB 617 Community Air Protection Program.

Chairperson John Gioia will provide an oral report of the Committee meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None;

B) None; and

C) None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Vanessa Johnson

Attachment 13A: 07/30/18 – Stationary Source Committee Meeting Agenda #4
Attachment 13B: 07/30/18 – Stationary Source Committee Meeting Agenda #5
Attachment 13C: 07/30/18 – Stationary Source Committee Meeting Agenda #6

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson John Gioia and Members
of the Stationary Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 17, 2018

Re: Air Pollution Complaint Process Overview

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

Annually, the Air District receives over 12,000 air pollution complaints from the members of the public. Complaints are concerns communicated to the Air District regarding the release or the potential release of air contaminants or other materials. Examples include smoke, odors, dust, and other particulate matter. Community members are aware of air pollution events and often provide the first warning of air quality problems. Air District staff continue to investigate every complaint to achieve early intervention on potential problems and allow the District to be proactive in protecting public health.

DISCUSSION

Staff will present an overview of the Air District's complaint process. The presentation will include a discussion of: how complaints are received and dispatched; complaint types; investigations; reporting; and next steps.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Patrick Wenzinger and Tracy Lee
Reviewed by: Wayne Kino

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson John Gioia and Members
of the Stationary Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 16, 2018

Re: Overview of Regulation 7: Odorous Substances Rule Amendment Concepts

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

In 1970, the Air District was directed by the State Legislature to establish standards for the emission of identifiable odorous substances. On August 2, 1972, the Air District adopted Regulation 2, Division 15 - Odorous Substances, which set emissions limits for five odorous compounds. The rule was originally intended to reduce odorous emissions from operations such as refineries, sewage treatment plants, and rendering plants. In 1976, the regulation was amended to alter source applicability based on citizen odor complaints, establish general limitations on odorous substances to be evaluated by an odor panel, and set limitations on total reduced sulfur (TRS) from kraft pulp mills.

Later the rule was renamed Regulation 7 – Odorous Substances. Between 1976 and 1982, the Air District restructured the regulations which resulted in two substantive amendments to Regulation 7 including, removing the sampling and analysis procedures for odorous substances and including those in a Manual of Procedures, and moving the kraft pulp mill requirements from Regulation 7 to a source-specific regulation aimed at addressing that industry. Regulation 7 was last amended in 1982.

DISCUSSION

Since the last amendment of Regulation 7 in 1982, changes in the Bay Area's population density, industrial and manufacturing processes, and proximity to residential housing and public spaces have highlighted the importance of updating the regulation to address odor impacts in communities.

Staff has initiated rule development efforts to amend Regulation 7 to strengthen odor standards and enhance enforceability of the rule. Rule amendment efforts will include reviewing and identifying a broad spectrum of odorous compounds from a variety of odor sources, industrial and manufacturing processes, and developing strategies to reduce and minimize odors. Amongst these

strategies, staff will consider updating the triggers for applicability of the rule and requiring an odor management plan for certain facilities. Evaluation of odor detection technologies will be aimed at providing additional tools for enforcement and assist in identifying odor sources in communities.

The timeline for the rule amendment process will be dependent on the field testing of odor detection technologies and method development. Proposed amendments to Regulation 7 is expected to be brought to the Board of Directors for approval in late 2019.

Staff will present the current Regulation 7 applicability and standards and provide an overview of initial concepts and strategies for amending the regulation.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Alona Davis and Tracy Lee
Reviewed by: Jeff Gove

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson John Gioia and Members of the Stationary Source Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 24, 2018

Re: Update on Implementation of Assembly Bill (AB) 617 Community Air Protection Program

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

The Community Air Protection Program was established by the state to implement Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statues of 2017), which directs the state, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans.

DISCUSSION

The Bay Area Air Quality Management District is required to submit a "final submittal" to the California Air Resources Board (CARB) on recommended communities that will be our focus for development of community monitoring plans and community emission reduction plans for the first five years of the state's Community Air Protection Program.

The list of high priority communities for monitoring plans and emission reduction plans will be revisited and re-submitted to CARB every year. The CARB board makes the final decision about which communities will be selected for community plans for that year.

In addition to community selection, AB 617 requires air districts in non-attainment of ambient air quality standards to conduct a best available retrofit control technology (BARCT) evaluation of sources at industrial facilities subject to the AB 32 Cap-and-Trade program and determine which sources are suitable for rule development.

In conducting this evaluation, Air District staff developed a list of potentially affected facilities, sources, and emissions from the 2016 Reporting Year Emissions Inventory. This evaluation indicated that the Bay Area has 80 facilities subject to Cap-and-Trade, 19 of which are in industrial sectors that are eligible for industrial assistance allowance allocations under the Cap-and-Trade

program. These 19 industrial facilities encompass 1,899 individual sources in 50 different source categories. Staff's process for developing the schedule of potential rule development projects involved 1) screening out sources with limited potential emission reductions, 2) screening out sources already subject to recent BARCT rules, 3) conducting preliminary BARCT evaluations, and 4) identifying and prioritizing potential BARCT rule development projects to be included in an Expedited BARCT Implementation Schedule for Board of Directors consideration later this year.

Based on this process, six potential rule development projects have been identified as candidates for the Expedited BARCT Implementation Schedule. Potential Rule Development Projects and the respective affected pollutants include: 1) Organic liquid storage tanks (ROG); 2) Petroleum wastewater treating (ROG); 3) Portland cement manufacturing (PM and SO_2); 4) Refinery fluid catalytic crackers and CO boilers (PM and SO_2); 5) Refinery heavy liquid leaks (ROG); and 6) Petroleum coke calcining (NOx).

Through this process, staff also identified 12 other source categories for further consideration. Rule development projects for these sources are not being proposed at this time because the potential emission reductions would be relatively small and are anticipated to have limited impact on local communities as a whole throughout the region. Staff recommends that further study and evaluation be conducted for these sources, and that action on these potential rule development projects would be more appropriately considered during development of local Community Action Plans.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Elizabeth Yura and Victor Douglas
Reviewed by: Elizabeth Yura

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 24, 2018

Re: Report of the Ad Hoc Building Oversight Committee Meeting of August 1, 2018

RECOMMENDED ACTION

A) Closed Session

1) REAL PROPERTY NEGOTIATIONS – (Government Code Section 54956.8) The Committee will meet in closed session pursuant to Government Code Section 54956.8 to confer with real property negotiators to discuss acquisition of real property.

Property:	4102, 4104, 4108, 4114, 4124 Lakeside Drive, Richmond, CA 94806
Air District Negotiators:	Jack P. Broadbent, Executive Officer/APCO Rex Sanders, Chief Administrative Officer
Negotiating Parties:	Bay City Mechanical
Under Negotiation:	Price and Terms

BACKGROUND

The Committee will meet on Wednesday, August 1, 2018, and will receive the following reports:

A) Closed Session – Real Property Negotiations

Chairperson Mark Ross will provide an oral report of the Committee meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

A) None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Aloha de Guzman
Reviewed by: Vanessa Johnson

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 24, 2018

Re: Recommended Assembly Bill (AB) 617 Communities for Community Plans

RECOMMENDATION

Recommend Board of Directors approve staff recommendations for community air monitoring and community emission reduction plans under the state's Community Air Protection Program.

BACKGROUND

The Bay Area Air Quality Management District is required to prepare a "final submittal" for the California Air Resources Board (CARB) on recommended communities that will be our focus for development of community monitoring plans and community emission reduction plans for the first five years of the state's Community Air Protection Program. The Community Air Protection Program was established by the state to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statues of 2017), which directs the state, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans.

This will be the second list of communities the Air District has submitted to CARB for action under AB 617. The first submittal included all communities that the Air District believes will benefit from AB 617 and associated incentive funding. This smaller list will be the communities for which we plan to develop community-specific plans for the first five years of the program. All the communities on the initial list will be eligible for the incentive funding.

The list of high priority communities for monitoring plans and emission reduction plans will be revisited and re-submitted to CARB every year. The CARB board makes the final decision about which communities will be selected for community plans for that year.

DISCUSSION

To develop this list of high priority communities for monitoring plans and emission reduction plans, Air District staff considered air quality and health data. Air quality data was obtained from the Air District's CARE Pollution Index and fine particulate matter and toxic air contaminant concentrations measured at San Francisco Bay Area monitoring sites. Health data was obtained from the CARE Vulnerability Index and the California Healthy Places Index developed by county public health officials. Staff also considered community readiness, historical and on-going community exposure characterization work by communities, concentration of stationary sources, community input, and socio-economic factors and other public health data available via statewide screening tools. Final recommendations for prioritizing areas for action are due to the state on July 31, 2018.

Community air monitoring and emission reduction plans are one component of AB 617. Plans will include a substantial research and analytical component to better understand local emission sources. Therefore, they are needed in communities where there is significant uncertainty about how much various sources contribute to pollution exposure and/or where there is a significant mobile source component to the exposure. The use of the Air District's regulatory authority can be used to more quickly reduce exposures in communities where there are already well-known emission sources.

The staff's analysis and recommendation document were posted for public review and comment on July 5, 2018. The public comment period closed on July 16, 2018. The staff presentation will address any comments received from that public process.

Staff Community Recommendations

Year 1: West Oakland, Community Emission Reduction Plan
Air District staff recommends West Oakland for an emission reduction plan in year 1 of the state's AB 617 program. The West Oakland Environmental Indicators Project (WOEIP) will be our co-lead in this effort. They have a long history of community planning and advocacy to reduce residents' exposure to diesel particulate matter and toxic air contaminants. WOEIP has been instrumental in bringing air pollution and its related health effects to the forefront of research and planning activities in West Oakland. They are uniquely positioned to engage quickly and effectively in an action planning effort and will likely serve as a model in future plans.

Year 1: Richmond, Community Air Monitoring
Air District staff recommends the Richmond area for a community monitoring plan in year 1 of the state's AB 617 program. In Richmond, we have an opportunity to leverage many historic and current monitoring studies. The Richmond area includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. There are a complex mix of emission sources in the Richmond area. It is home to a large refinery and chemical plant, a seaport, organic waste and metal facilities, small to medium industrial and manufacturing facilities, high volume freeways and roadways, a railyard and rail lines. The primary goal of the Richmond monitoring effort will be to better characterize this mix of sources and to more fully understand the associated air quality and pollution impacts.

Years 2-5 Communities
Air District staff recommends East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo for years 2-5 in the state's AB 617 program. Like Richmond and West Oakland, currently available data shows that these communities have higher levels of environmental exposures and more significant health burdens compared to the rest of the Bay Area. These health burdens increase vulnerability to environmental exposures. Over the next several years, Air District staff will be working to build capacity in these communities for future planning and/or community air monitoring. Building relationships and developing a shared understanding of local air quality issues, combined with lessons learned from the year 1 activities, will provide strong foundation for improving air quality in the years 2-5 communities.

Communities for Years 6 and Beyond
Our recommended communities for years 1 through 5 do not represent all Bay Area communities that have high levels of air pollution. The Air District is committed to addressing air quality issues, and associated health impacts, in every Bay Area community burdened by air pollution. The Air District will use its permitting, monitoring, education, regulatory, enforcement and grants programs to improve air quality issues across the region.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Christianne Riviere
Reviewed by: Elizabeth Yura

Attachment15A: Final Submittal: Public Process for Determination of Recommended Communities

San Francisco Bay Area Community Health Protection Program: Improving Neighborhood Air Quality

Final Submittal: Public Process for Determination of Recommended Communities

August 1, 2018

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

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Table of Contents

Attachments

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Executive Summary

The Bay Area Air Quality Management District is required to prepare a "final submittal" for the California Air Resources Board (CARB) on recommended communities for the first five years of the state's Community Air Protection Program. The Community Air Protection Program was established by the state to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statues of 2017), which directs the state, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans.

Bay Area residents helped Air District staff select all candidate communities, and final recommended communities for years 1 through 5. Since January 2018, residents attended numerous workshops and used online engagement tools to share local air quality concerns and to propose communities for action. Community recommendations, along with air quality and health data, helped us draft a complete set of areas in the Bay Area that would be good candidates for the development of an action and/or monitoring plan. All areas were sent to the California Air Resources Board on April 25, 2018.

To select year 1 through 5 communities, Air District staff considered air quality and health data. Air quality data was obtained from the Air District's CARE Pollution Index, and also fine particulate matter and toxic air contaminant concentrations measured at San Francisco Bay Area monitoring sites. Health data was obtained from the CARE Vulnerability Index and via life expectancy. We also considered community readiness, historical and on-going community and other monitoring or exposure efforts, concentration of stationary sources, community input, and socio-economic factors and other public health data available via statewide screening tools.

Year 1: West Oakland, Community Action Plan

The Air District recommends West Oakland for an action plan in year 1 of the state's AB 617 program. The West Oakland Environmental Indicators Project (WOEIP) will be our partner in this effort. They have a long history of community planning and advocacy to reduce residents' exposure to diesel particulate matter and toxic air contaminants. Maritime-freight industries, rail, large distribution centers, a cement plant, a power plant, metal facilities, small to medium industrial and manufacturing operations, major freeways and busy roadways used as trucking routes all impact the West Oakland community. These sources contribute to high levels of $PM_{2.5}$ concentrations and elevated cancer risk from toxic air contaminants. West Oakland is considered one of the most impacted areas in the San Francisco Bay Area due to the area's many sources of diesel particulate matter.

Year 1: Richmond, Community Air Monitoring Plan

The Air District recommends the Richmond area for a community monitoring plan in year 1 of the state's AB 617 program. In Richmond, we have an opportunity to leverage many historic and current monitoring studies. The Richmond area includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. There are a complex mix of emission sources in the Richmond area. It is home to a large refinery and chemical plant, a seaport, organic waste and metal facilities, small to medium industrial and manufacturing facilities, high volume freeways and roadways, a railyard and rail lines.

Years 2-5 Communities

The Air District recommends East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo for years 2-5 in the state's AB 617 program. Over the next several years, we will be working to build capacity in these communities for future planning and/or community air monitoring. Building partnerships and developing a shared understanding of local air quality issues, combined with lessons learned from the year 1 activities, will provide a strong foundation for improving air quality and health in the years 2-5 communities.

Year 6+ Communities

The communities recommended for years 1 through 5 do not represent all Bay Area communities that have high levels of air pollution. The Air District is committed to addressing disproportionate impacts caused by air quality issues, and associated health outcomes, throughout the Bay Area. The Air District will use its permitting, monitoring, education, regulatory, enforcement, grants programs and all other available tools to address air quality issues across the region. This will allow us to improve health outcomes for everyone.

Introduction

This document serves as the as the Bay Area Air Quality Management District's (Air District's) final submittal on "recommended communities" for the first five years of the state's Community Air Protection Program, as required by the California Air Resources Board (CARB). The Community Air Protection Program was established by the state to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statues of 2017). AB 617 directs the state, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans

The Air District first initiated a comprehensive program to identify areas that experience regional disparities in air pollution exposure and health effects in 2004. Through the Community Air Risk Evaluation (CARE) program, the Air District identified areas in the San Francisco Bay Area where air pollution disparities are most significant and where populations are most vulnerable to air pollution.

The CARE program served as a starting point for the Air District's work in selecting "candidate communities" for CARB's Community Air Protection Program. On April 25, 2018, the Air District submitted candidate communities to CARB - communities in the San Francisco Bay Area that the Air District identified as having a high cumulative exposure burden. San Francisco Bay Area candidate communities included all the Air District's CARE areas, as well as areas with large sources of air pollution (refineries, seaports, airports, etc.), areas that have been identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas that have low life expectancy.[1]

To select recommended communities from all San Francisco Bay Area candidate communities, the Air District considered both air quality and health-based data. Air quality data was obtained from the Air District's CARE Pollution Index,[2] and also fine particulate matter ($PM_{2.5}$) and toxic air contaminant concentrations measured at San Francisco Bay Area monitoring sites. The CARE Pollution Index includes both modeled concentrations of cancer risk and fine particulate matter, as well as interpolated concentrations of ozone from monitoring sites. Health data was obtained from the CARE Vulnerability Index[3] and life expectancy. The CARE Vulnerability Index includes mortality rates, costs from ER visits and hospitalizations for illnesses aggravated by air pollution. Life expectancy was considered as a public health indicator. We also considered community capacity (community resources and capacity to immediately participate in AB 617), historical and on-going community monitoring efforts or exposure characterization work by communities, concentration of stationary sources, community input, and socio-economic factors and other public health data available via statewide screening tools.[4]

Below are the enumerated responses to the specific questions listed in CARB's *Community Protection Program Draft Process and Criteria for 2018 Community Selections*.[5] Specifically, included is a description of the Air District's recommended communities, early work in communities, required resources,

[1] See Attachment A for a map of all Air District "high cumulative exposure burden" areas.
[2] See Attachment B for CARE Pollution Index map
[3] See Attachment C for CARE Vulnerability Index map
[4] See Attachment D for full methodology description.
[5] Full questions are listed in Attachment E; CARB document available here: https://ww2.arb.ca.gov/sites/default/files/2018-02/capp_draft_process_and_criteria_for_2018_community_selection_february_2018.pdf

availability of data to prepare community-level emission inventories and the public process used to identify, and then prioritize and select, recommended communities.

1. Description of Year 1 Communities

The Air District recommends West Oakland and the Richmond area as the San Francisco Bay Area's year 1 communities for the state's Community Air Protection Program. We recommend West Oakland for a community emission reduction program (action plan) and the Richmond area for a community air monitoring plan.

Figure 1. SF Bay Area, Year 1 Communities, Years 2-5 Communities

West Oakland: Community Emissions Reduction Program

The residential area of West Oakland is generally bounded by the Port of Oakland, the Union Pacific rail yard, and I-580, I-880 and I-980 freeways. Specific geography for the study area will be determined in partnership with the community, i.e. in conjunction with the Community Steering Committee, which will be established as part of the emission reduction program. The study area geography will include the numerous sources that impact West Oakland.

Maritime-freight industries (including the Port of Oakland, the redevelopment of the Oakland Army Base and private facilities), the rail yard and rail lines, large distribution centers, a cement plant, a power plant, metal facilities, small to medium industrial and manufacturing operations, major freeways and busy roadways used as trucking routes all impact the West Oakland community. These sources contribute to high levels of $PM_{2.5}$ concentrations and elevated cancer risk from toxic air contaminants. West Oakland is considered one of the most impacted areas in the San Francisco Bay Area due to the area's many sources of diesel particulate matter. Unknown additional impacts may occur due to the redevelopment of the Oakland Army Base.

Approximately 25,000 people live in the West Oakland area. Nearly 30 percent of the population is African-American and over 25 percent is Latino.[6] West Oakland is predominantly a low-income and high health-burden community. It is a designated CARE area, has high levels of environmental exposures and experiences social and economic disadvantages. Health burdens that increase vulnerability to environmental exposures are widespread in the West Oakland community. People living in West Oakland experience more asthma emergency room visits, higher rates of cardiovascular disease, greater

[6] U.S. Census Bureau, 2010 Census.

unemployment, lower educational attainment, higher housing cost burden, lower life expectancy and higher incidences of poverty than most other areas in Alameda County.

The Air District, the West Oakland Environmental Indicators Project and other community groups and researchers have spent decades doing monitoring, modeling and planning related work to better understand and address the community's exposure to air pollution.[7] The body of knowledge and experience of the West Oakland community, as well as the established relationship between the Air District and West Oakland Environmental Indicators Project positions West Oakland as a community most likely to succeed in developing a robust community emission reduction plan given the challenging legislative deadlines. West Oakland Environmental Indicators Project has been instrumental in bringing air pollution and its related health effects to the forefront of research and planning activities in West Oakland, and is uniquely positioned to engage quickly and effectively in an action planning effort that will serve as a model for future action plans.

Richmond: Community Air Monitoring Plan

For the purposes of this submittal, the Richmond area includes the City of Richmond, areas in El Cerrito just south of Richmond, and communities just north and east of Richmond, including portions of San Pablo and several unincorporated communities, such as North Richmond. The specific geography for the study area and the monitoring objectives will be determined in partnership with the community, i.e. in conjunction with the Community Stakeholder Group, which will be established as part of the community air monitoring planning process.

In the Richmond area, which is also a designated CARE area, there is a complex mix of emission sources: a large refinery and chemical plant, a petroleum coke terminal, organic liquid storage and distribution facilities, a seaport, organic waste and metal facilities, small to medium industrial and manufacturing sources, high volume freeways and roadways, a rail yard and rail lines.

Approximately 100,000 people live in the Richmond area.[8] A variety of communities and neighborhoods make up the Richmond area. Neighborhoods range from 16 to over 33 percent African American; and from 40 to over 56 percent Latino. Many of these areas are low-income and have high health burden that increase vulnerability to environmental exposures. Areas throughout Richmond also experience social or economic disadvantages. People living in the Richmond area, especially North Richmond and the Iron Triangle, experience more asthma emergency room visits, higher rates of cardiovascular disease, greater unemployment, lower educational attainment, higher housing cost burden, lower life expectancy and higher incidences of poverty than in other areas of Contra Costa County.

There are several ongoing monitoring and air quality research projects in the Richmond area. Projects include the expansion of monitoring efforts in Richmond due to the Air District's Regulation 12, Rule 15 (Petroleum Refining Emissions Tracking), a community monitoring project through an EPA STAR grant in which the Air District is partnering with the South Coast Air Quality Management District to build a low-cost sensor guidance document, an air toxics data analysis effort with the City of Richmond through an EPA Community-Scale Air Toxics Monitoring Grant, and other studies by researches or other government agencies. These projects and studies can be leveraged and will allow a year 1 monitoring plan in Richmond to be more feasible in the legislatively required timeframe. These efforts will also help inform and improve the monitoring efforts in the area, for data collected by all the various project can

[7] More information about these projects is listed in the Air District response to item 3, *Work Already Started*.
[8] U.S. Census Bureau, 2010 Census.

be comprehensively reviewed and analyzed and any findings leveraged. The Air District also expects to work with other groups funded by CARB or other organizations to assist with any ongoing monitoring efforts, including ensuring the work is transparent to the public. (More information about these projects is provided below.)

2. Description of Years 2-5 and Year 6+ Communities

Years 2-5 Communities

The Air District recommends East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo as the San Francisco Bay Area's years 2-5 communities for the state's Community Air Protection Program. These communities rose to the top of many of the air quality and health metrics evaluated by the Air District. The Air District will continue to develop more refined and accurate data on health vulnerability and air pollution exposure. Recommendations for years 2-5 will be re-evaluated each year, as new data to better understand community air quality concerns become available.

East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo include numerous high health-burden neighborhoods with disproportionately high exposure to air pollution. Many people living in the years 2-5 areas experience more asthma emergency room visits, higher rates of cardiovascular disease, greater unemployment, lower educational attainment, high housing cost burden, lower life expectancy and higher incidences of poverty than other areas of the San Francisco Bay Area.

Table 1 lists the significant stationary and mobile sources of pollution in each of the years 2-5 communities.

Table 1. Emission Sources

Community Area	Stationary Sources	Mobile Sources
East Oakland/San Leandro	Waste facilities, metal facilities, crematory, small to medium industrial and manufacturing operations.	Oakland International Airport, large distribution centers, high-volume freeways and roadways (I-880, I-238, I-580, Highway 92), trucks, transit buses, industrial equipment, freight and passenger rail
Eastern San Francisco	Organics recovery and waste facilities, power plants, and numerous small to medium industrial and manufacturing operations	High-volume freeways and roadways (I-280, I-80, Bay Bridge, Highway 101), trucks, industrial equipment, transit buses, harbor craft, freight and passenger rail, construction equipment
Pittsburg-Bay Point Area	Power plants, chemical plant, landfills, metal and chrome plating facilities, agriculture equipment	Freight rail, high-volume freeways and roadways (Highway 4, Highway 160), industrial equipment, transit buses, harbor craft, ocean going vessels
San Jose	Organics and waste recovery facilities, organic liquids storage and distribution facilities, quarries,	San Jose International Airport, freight and passenger rail, high volume freeways and

	cement and asphalt plants and small to medium industrial and manufacturing operations	roadways (I-880, I-280, I-680, Highway 101, Highway 87), trucks, transit buses, industrial equipment distribution centers
Tri-Valley	Waste facilities, airport, research laboratories, quarries, cement and asphalt plants	High volume freeways and roadways (I-680, I-580), trucks, transit buses, construction and agriculture equipment
Vallejo	Marine terminals, landfills, metal facilities, cement plant (potential)	Freight rail, high-volume freeways and roadways (I-80, Highway 29, Highway 37), trucks, industrial equipment, transit buses, harbor craft, ocean going vessels

Year 6+ Communities

The Air District identified high cumulative exposure burden areas, or candidate communities, in every county in the San Francisco Bay Area. Recommended year 1 and years 2-5 communities have been selected from these areas. Areas recommended for years 6+ are all the San Francisco Bay Area's candidate communities, not identified as a year 1 or years 2-5 community. Years 6+ communities are areas that were identified as having one or more of the following characteristics: within an Air District CARE area, has large sources of air pollution, has been identified via statewide screening tools as areas with pollution and/or health burden vulnerability, or has low life expectancy.

Years 6+ communities in the San Francisco Bay Area are mostly in the region's suburban or semi-rural areas, with some locations in the urban core. In general, communities identified as years 6+ have some level of environmental exposures and/or experience social or economic disadvantages. They may also have health burdens that increase vulnerability to environmental exposures, but to a lesser extent than those identified above. In general, Years 6+ communities may experience higher levels of exposure areas air pollutants, suffer from more air quality related health impacts and higher incidences of poverty than those identified above.

3. Information for Recommended Communities

Work Already Started

The Air District has a long history of working in and with communities to reduce people's exposure to harmful emissions. For over 60 years, the Air District has been passing regulations on large facilities, small to medium industrial sources, diesel engines, fireplaces and many other sources to reduce local exposure to air pollutants. Permitting and enforcement of our regulations ensures exposure reductions are realized. Our monitoring work, including fence-line and other source-oriented monitors, near-roadway monitors and regional fixed-site monitors allow Air District staff to assess and better understand regional and local air pollutant levels. Incentive programs enable the Air District to further reduce emissions and pollutant exposure from the sources we cannot regulate. Trucks, vehicles, locomotives, ships and industrial and construction equipment are often the most significant sources of pollution in our most impacted communities. The CARE program, initiated in 2004, served as the Air District's foundation for identifying and selecting communities most impacted by and vulnerable to health impacts from air pollution for the AB 617 effort.

AB 617 presents an opportunity to continue and expand these programs - to ensure that exposure to air pollutants is reduced in our most impacted communities. Through AB 617, we will build community capacity to better understand the impacts of poor air quality and participate in the AB 617 process. We will build better partnerships, engagement strategies and educational materials to ensure a shared understanding of air quality and related community health. The specific work we are doing in West Oakland and Richmond, and how our work impacts all AB 617 communities is described below.

Year 1 Communities: West Oakland and Richmond

The Air District has been working directly with our recommended year 1 communities to support the development of a community emission reduction program in West Oakland and a community air monitoring plan in Richmond. Our work in West Oakland continues the partnerships we have had with the West Oakland community, especially with the West Oakland Environmental Indicators Project, for well over a decade. It also builds on over thirty years of planning activities. Early plans focused on economic revitalization and transportation access, often addressing specific areas or neighborhoods in West Oakland, such as Seventh Street, the Mandela Parkway, or Acorn-Prescott. Over the past fifteen years, various planning activities have sought to bring jobs, retail and services to the community; to address incompatible land uses; to improve transit, bike, and pedestrian access; to increase mixed-use development; to preserve the existing housing stock; to increase the supply of affordable housing; and to reduce the community's exposure to diesel particulate matter and toxic air contaminants.

West Oakland's exposure to diesel particulate matter and toxic air contaminants, and corresponding health burden has been extensively studied. Beginning with a partnership with the Pacific Institute in 2000, the West Oakland Environmental Indicators Project has been instrumental in bringing air pollution and its related health effects to the forefront of research and planning activities in West Oakland. West Oakland Environmental Indicators Project has led or participated in the following studies: *Neighborhood Knowledge for Change: The West Oakland Environmental Indicators Project (2002)*, *Clearing the Air: Reducing Diesel Pollution in West Oakland* (2003), *Paying with Our Health: The Real Cost of Freight Transport in California* (2006), and the *West Oakland Truck Survey* (2009). In addition, West Oakland Environmental Indicators Project co-chaired the Port of Oakland's 2009 Maritime Air Improvement Plan (MAQIP) and the MAQIP update currently underway. They were an active member of the West Oakland Specific Plan (2014) working group and continue to participate in the Oakland Army Base Stakeholder Group.

These partnerships have also helped to expedite investments to early-retire highly polluting mobile sources impacting the West Oakland community. Between 2008 and 2016 the Air District awarded over $33 million in grants to retrofit or replace approximately 2000 diesel trucks that move goods from Port of Oakland. During this time, the Air District also awarded more than $24 million to install shore power infrastructure to reduce pollution from ocean-going vessels at the Port of Oakland. These investments, along with ARB air toxic control measures for mobile sources, have helped significantly reduce diesel emissions in West Oakland, and the region. Since 2016, the Air District awarded more than $10 million to additional projects to reduce emissions from locomotives, cargo-handling equipment, marine vessels, and on-road trucks. These projects will reduce more than 84 tons of NOx, 2.7 tons of ROG, and 1.4 tons of diesel PM per year.

Despite this extensive history of planning, research, and grant-funding activities in West Oakland, more work needs to be done. We need to integrate the findings of past studies and implement measures that

reduce criteria air pollutants and toxic air contaminants emissions and exposure to improve health outcomes. To this end, the West Oakland Environmental Indicators Project and the Air District have recently developed a formal partnership to develop a community emission reduction action program for the West Oakland community. We worked together to identify local stakeholders and community members to participate on a steering committee to guide the development of the action plan. The steering committee has formed and has begun meeting.

In the Richmond area, Air District staff is working to establish a group of strong local, community-based organizations to partner with the Air District in leading the effort to develop the community air monitoring plan. We are beginning by building a "bench" of community partners that can bring various skills, knowledge, and capabilities to the partnership. We expect to have community partners on board by late Summer 2018. In parallel, we are preparing a technical assessment and information report for the Richmond area, to share with community partners for their input. We will also work with our community partners to identify local stakeholders and other community members to form a larger stakeholder group.

There are several air monitoring and air quality data analysis efforts ongoing in Richmond. These efforts can be leveraged to ensure the Richmond community air monitoring plan is feasible and successful in the short state-mandated time frame. One such effort is the expansion of the fence-line monitoring systems to include all Bay Area refineries, including expansion of the current system at the Chevron Refinery. Chevron has proposed to expand its fence-line monitoring system to meet the requirements of the Air District's Regulation 12, Rule 15 (Rule 12-15). Additionally, as part of the Rule 12-15 process, the Air District committed to expand efforts to characterize levels of air pollutants in communities near refineries by adding an additional fixed monitoring site. The Air District is assisting the City of Richmond on an EPA Community Scale Toxics Grant, to evaluate and interpret air toxics data collected at sites near the Chevron Refinery. The Air District is also working with the Asian Pacific Environmental Network community organization to implement a $PM_{2.5}$ community-led sensor project in the Richmond area as one of the Northern California communities participating in an EPA STAR Grant: "Engage, Educate and Empower California Communities on the Use and Applications of "Low-cost" Air Monitoring Sensors" in partnership with the South Coast Air Quality Management District.[9] Finally, there are current and historical air monitoring projects the Air District worked on with researchers and other governmental organizations that will provide data and other information to inform year 1 monitoring planning efforts.

The Air District has also provided grant funding to incentivize early-emissions reductions from projects in Richmond. Since 2016, the Air District has awarded more than $3.8 million to eligible projects in Richmond that will reduce air pollution from light-duty vehicles, locomotives, marine vessels, and off-road equipment. These projects will reduce more than 6.8 tons of NOx, 0.42 tons of ROG, and 0.37 tons of diesel PM emissions per year.

Moving forward, the Air District will continue pursuing funding from all available sources, such as state and federal agencies and settlement funds. These funds will be used to augment the Air District's traditional grant funding sources, which total approximately $50 million on an annual basis. Air District's grant funds are used to support projects that reduce air pollution and improve air quality in the Bay Area and are prioritized for communities that are disproportionately impacted by air pollution.

[9] More information on EPA Star Grant may be found here: http://www.aqmd.gov/aq-spec/research-projects)

Stationary Source Regulations

Many Air District stationary source regulations will directly benefit communities that have oil refineries, cement plants, chemical plants, large facilities, small to medium industrial sources, organic waste facilities and a variety of other sources.[10] Air District rules and programs that will improve facility and/or source emissions, and therefore community exposure to pollutants, are summarized below:

- Toxics: The Air District's Regulation 11, Rule 18 (Rule 11-18) is the most stringent health-based air toxics regulation in California. The rule requires health risk screening for all facilities in the Bay Area that report toxic air contaminant emissions. The screening analysis will determine a prioritization score for each facility. The score will be based on the amount of toxic air pollution emitted, the degree of toxicity and the proximity of pollutants to local communities. Facilities that exceed a prioritization score threshold will undergo health risk assessment for all permitted sources that emit toxic air contaminants. Facilities with health risks above a risk action threshold would be required to reduce their risk or meet retrofit control guidelines for all significant risk sources. Facilities with the highest risk levels would be required to submit risk reduction plans by 2020. Risk reductions at the highest risk facilities should be completed during 2020-2025. Others subject facilities should complete risk reductions by 2030.

- Best Available Retrofit Control Technology: Additional rules will be put into place to further reduce emissions where there are opportunities for further cost-effective controls. AB 617 required review of a set of eighty facilities, housing over 3,000 sources, throughout the Bay Area. This review resulted in the identification of up to 12 possible new regulations to further reduce emissions from these sources. These include controls on organic liquid storage tanks, petroleum wastewater treatment, Portland cement manufacturing, refinery equipment and boilers, landfills, fiberglass manufacturing and petroleum coke calcining.

- Petroleum Refineries: There are five large refineries in the Bay Area with several nearby communities, including Richmond, Crocket and Rodeo, Martinez, Clyde and Benicia. In addition to potential emission reductions due to the implementation of Rule 11-18, there are several other refinery-specific regulations that are being developed or implemented. These regulations will either help characterize emissions from these facilities, characterize cumulative exposure in communities near refineries, or achieve further emission reductions. These requirements include Rule 12-15 Petroleum Refining Emissions Tracking – which requires the refineries to establish air monitoring plans and operate fence line air monitoring systems (http://www.baaqmd.gov/plans-and-climate/emission-tracking-and-monitoring/fenceline-monitoring-plans) and Air District planning for the expansion of air monitoring in communities near refineries, using feedback from Spring 2018 public workshops. Rule 12-15 also requires refineries to submit information that will help the Air District improve and standardize emissions estimates from the petroleum refineries.

[10] A stationary source is an individual fixed emitter of air pollutants, such as a boiler. A facility may have multiple individual stationary sources, such as a petroleum refining facility.

- Woodsmoke: Many communities in the San Francisco Bay Area are impacted by $PM_{2.5}$ emissions from residential wood burning, including areas in the Sonoma and Napa Valley, Santa Rosa, Marin and other rural communities. For some communities, especially the rural communities tucked into the many valleys of Marin, Sonoma and Napa, residential wood burning is the only significant source of $PM_{2.5}$. These areas may also have health burdens and high levels of poverty, which air pollution can exacerbate, especially if residents have limited access to health care. Several residents from rural communities in Marin County asked that their communities be included in the Air District's first year recommendations for AB 617 action. Although woodsmoke is a considerable concern in these communities, AB 617 is intended to address cumulative air quality and health burden areas; those areas that are impacted my multiple sources of air pollution, such as large industrial sources, major marine ports, congested freeways and roadways and/or rail.

  Although we are not recommending any community exclusively impacted by woodsmoke for the in this submittal, the Air District is committed to reducing woodsmoke in communities impacted by the effects of wood burning. In the past several years, the Air District has both strengthened its rules related to wood burning and offered significant public funding to replace wood-burning equipment with cleaner options. The Air District is expecting to continue to address residential woodsmoke emissions through additional incentive programs that provide funding to residents to help replace older and highly polluting fireplaces and wood-burning stoves with cleaner alternatives. We are also considering further strengthening of our Wood-Burning Devices Rule.

- Permitting: The Air District is considering changes to our permitting program to address cumulative impacts. To examine the possibilities, we have created a cross-divisional workgroup to broadly review and recommend changes to the existing permitting system. We are considering all permitting policies and procedures, rules and regulations, local land use permitting guidance and CEQA guidelines.

- Odors: The Air District will be amending its odor rule, Regulation 7, to help reduce odors that impact communities. Efforts are underway to strengthen standards that limit odorous compounds and develop strategies to enhance the enforceability of the existing odor rule.

- Methane: In 2017, the Air District developed a comprehensive Basin-wide Methane Strategy, an agency-wide effort to better quantify and reduce the region's methane emissions. Rules associated with the strategy will focus on methane specific to organics material handling and to composting. In addition to climate benefits, the Methane Strategy is expected to garner reductions in reactive organic gases, a precursor to ozone formation. There is also the potential for reduction of some toxic volatile organic compounds as a co-benefit.

- Organics Recovery: The Air District is developing an Organics Recovery Strategy. Changes in state law will impact San Francisco Bay Area organics recovery, including landfill management, composting, and anaerobic digestion. In addition to possible new or modified rules, the Air District will consider non-regulatory measures to take a lifecycle approach to organics diversion. The regulations and best practices that follow from this effort are expected to reduce emissions of all pollutants associated with this process, including methane and compounds that cause

odor nuisances and/or lead to ozone formation. There is also the potential for reduction of some toxic volatile organic compounds as a co-benefit.

- Particulate Matter (Fugitive Dust): A suite of regulations focusing on particulate matter emissions is going to the Air District Board for consideration in Summer 2018. Following the adoption of those new rules and amendments, implementation would target fugitive dust emissions including those from bulk material handling and from truck trackout. This would primarily help reduce particulate emissions from activities at construction sites, landfills and rock quarries, some of which impact AB 617 communities.

Mobile Source Incentives

The cost to accelerate fleet turnover in the highly impacted communities will likely require significant incentive funding to help fleet owners and operators to make early investments in cleaner technology in the absence of regulations from the state and federal governments who have regulatory authority over mobile sources. As an example, a recent review of the fleet inventory at the Port of Oakland that was developed by Port staff shows that the total cost to replace most of the existing vehicles that service the Port and equipment that is operated at the Port with cleaner alternatives is estimated to exceed $200 million.

In 2017, the legislature passed Assembly Bill (AB) 134, which appropriated $250 million in Greenhouse Gas Reduction Funds to achieve early emission reductions in communities most burdened by air pollution. Incentive funds are targeted toward engine replacement, repower, and infrastructure projects in disadvantaged and low-income areas. The San Francisco Bay Area has received $50 million of these funds. Per legislative requirements, funds will be directed at projects that can deliver “early action” emission reductions in our most disadvantaged communities, including both recommended year 1 communities, most of the recommended years 2-5 communities, and in several year 6+ communities. Funds will be directed to communities along the I-880/I-80 Corridor: Hayward to Richmond including East and West Oakland, Berkeley and Richmond; and in the Refinery Corridor: Rodeo and Vallejo, Martinez to Pittsburg.

Building Capacity in All AB 617 Communities

A wide variety of community capacity building efforts have begun and will continue as we implement AB 617 throughout the region. Capacity building means building respectful and open relationships with community members, establishing partnerships, and sharing information. It means providing the tools and assistance needed for authentic empowered participation in designing the work ahead. We expect to learn about communities, and for communities to learn more about the importance of good air quality and its contribution to community health. We are currently developing curriculum for an “Air Quality Academy,” with the goal building a shared understanding of air quality issues and concerns between the Air District and our community partners. In addition, the Air District is in the process of establishing a Community-led Air Quality Sensing Program, which will seek new and improved ways to partner with community groups in addressing air quality concerns throughout the Bay Area. The Program will provide guidance and resources to ensure communities are successful in their monitoring efforts and is intended to respond to a variety of both internal and external community needs, including assisting with all aspects of community monitoring from inception, monitoring, analysis, and next steps.

Resource Needs

AB 617 is the one of most significant changes in air quality regulation in the last 35 years. Increasing the focus on localized air pollution in overburdened communities is a welcome and necessary initiative for public health and equity in California. However, it requires significant additional resources.

Community

Communities in years 1 through 5 will need funding for a variety of activities to build community readiness to eventually develop an emission reduction programs and/or community air monitoring plan. AB 617 is envisioned as a community-based endeavor, and therefore communities will be at the center of planning and decision-making regarding local priorities for action. However, not all communities are at the same starting point, or level of readiness. At each stage of the process, community organizations will need financial assistance to support their participation. Funding is especially needed for the capacity building, plan development, and plan implementation and evaluation.

- Capacity Building: includes stakeholder identification, community surveys, mappings, review of existing plans and data, formation of an AB 617 stakeholder group including local jurisdictions and regulated entities. Build shared understanding about air quality, community concerns, local issues, and about Air District programs and resources.
- Emission Reduction Program and/or Air Monitoring Plan Development: Communities co-lead a process with the Air District to develop and adopt a plan for emission reductions or air monitoring consistent with CARB guidance, with local government and other stakeholder involvement.
- Plan Implementation and Evaluation: includes implementing community monitoring, actions, or mitigations as described in the plans, review of initial milestones, and assist evaluating metrics for progress as defined in the plans.

The Air District estimates that approximately $500,000 per year will be required for community capacity building and participation in AB 617 processes. This funding is needed across the Bay Area, not just in the communities identified for years 1-5.

In addition to the community capacity building and participation efforts, some communities may desire to perform their own community-led monitoring efforts, in addition to the community-led monitoring that could be a part of implementing any active AB 617 Community Monitoring Plan. The Air District estimates that each of these community-led monitoring efforts will require $500,000.

To ensure that the data are useful in moving toward emissions reductions, the Air District will need to provide technical assistance to the communities conducting this monitoring, including study design, monitoring implementation, and data analysis and interpretation. Air District technical staff may have the capacity to assist with one of these projects per year. Therefore, the total annual costs for community-led monitoring in the Bay Area is estimated to be $500,000 per year. Total cost for community participation in AB 617 is estimated to be $1 million per year.

Air District

Most of the air pollution impacting overburdened communities is from mobile sources. Addressing the impacts of this pollution will require a cooperative effort between the local air districts and the California Air Resources Board. Since Air Districts can only charge permit fees to stationary sources to address the impacts of their pollution, there is very limited opportunity to raise the needed funds from fees.

The Air District will incur significant start-up costs to set up its new Community Health Protection Program to implement AB 617. During the first year of implementing the state Community Air Protection Program, the Air District will incur nearly $13 million in initial costs associated with the identification of a prioritized list of impacted communities, development and adoption of a Community Action Plan, development and implementation of a Community Monitoring Plan, development of new state-wide emissions inventory protocols, review of best available retrofit control technology and potential adoption of amended regulations to gain benefits from the technology. Much of this work will become ongoing, including working with impacted communities in advance of the development of additional community action and monitoring plans.

Ongoing, annual costs for specific Air District activities are provided in Table 3.

Table 22. Air District Resource Needs

Program Component	Activity	Cost
Community Monitoring	Staff to maintain equipment, assess and analyze data, and to conduct short-term monitoring studies. Laboratory equipment and supplies. Assistance to community groups for community-led monitoring. Special studies to measure emissions from large sources using new technology.	$5.4 million
Community Emissions Reduction Plans	Staff to prepare community emission reduction programs, track community progress and prepare annual progress reports to state. Consultants for conducting CEQA analyses. Additional inspectors to provide enhanced enforcement in AB 617 communities.	$5.2 million
Community Engagement	Staffing to manage community grants and work with community-based organizations to build capacity.	$0.6 million
Review of Best Available Retrofit Control Technology	Development and implementation of new rules to reduce emissions from large stationary sources.	$0.8 million
Emissions Reporting Coordination	Ongoing improvement in emissions estimates.	$0.3 million
Overhead	Executive time to coordinate/oversee program development. Legal services for CEQA analysis and regulatory development. Administrative overhead for new staff and contracts.	$1.7 million
Total Expected Cost		**$14 million**

Community-Level Emission Inventory: Emissions Data Availability

Data for developing a community-level emissions inventory for the areas of West Oakland, Richmond, East Oakland/San Leandro, Eastern San Francisco, Pittsburg-Bay Point-Antioch, San Jose, the Tri-Valley area, and Vallejo are available, but significant work is required to acquire and process these data. For example, an updated emissions inventory is currently being prepared by the Port of Oakland and emissions inventories are available for stationary sources permitted by the Air District. The Air District has also compiled and modeled on-road mobile emissions for *Planning Healthy Places,*[11] a tool that helps local governments identify areas in their communities that have high levels of cancer risk from toxics and high concentrations of $PM_{2.5}$. We are also working to improve our emission inventory as data are generated through monitoring, source testing and other means. In the coming months, we will also begin working with external partners, including CARB, on a uniform methodology for performing community-level emissions inventories in all communities recommended for community emission reduction programs. The Air District looks forward to partnering with CARB in this effort, specifically in the development of mobile source emissions inventories, and especially for off-road mobile sources.

4. Public Process used to Identify, Prioritize and Select Recommended Communities

The Air District developed and implemented an extensive outreach plan to ensure community participation in the identification, prioritization, and then selection of recommended communities for the state's Community Air Protection Program. Outreach consisted predominately of public workshops and online community engagement.

The Air District held a total of eleven workshops throughout the region on AB 617, and specifically on community identification and prioritization. Outreach for workshops include informational flyers posted at libraries, community centers and other popular gathering places, e-blasts, social media posts on Facebook and Twitter, press releases and follow-up media advisories, posts in community calendars, targeted emails to key community stakeholders and Spare the Air Resource Teams, and targeted outreach at community events in target communities (e.g., groundbreaking event at Pittsburg Unified School District).

Table 3. San Francisco Bay Area AB 617 Public Workshops

Date	Workshop Title	Venue	Attendees
January 31, 2018	Landmark Local Air Pollution Legislation - AB 617	Air District Offices, 375 Beale St, Yerba Buena Rm, San Francisco, CA 94105	66
March 28, 2018	New Funding and New Efforts to Curb Local Air Pollution (AB 617)	Hilton Garden Inn, 510 Lewelling Boulevard San Leandro, CA 94579	17
April 24, 2018	AB 617 Community Health Protection Program Public Workshop	Florence Douglas Senior Center, 333 Amador St, Vallejo, CA 94590	29
April 25, 2018	AB 617 Community Health Protection Program Public Workshop	Ambrose Community Center, 3105 Willow Pass Road, Bay Point, CA 94565	13
April 30, 2018	AB 617 Community Health Protection Program Public Workshop	Pleasant Hill Community Center, 320 Civic Drive, Pleasant Hill, CA 94523	11
May 10, 2018	AB 617 Community Health Protection Program Public Workshop	Shannon Community Center, 11600 Shannon Avenue, Dublin, CA 94568	0
May 16, 2018	AB 617 Community Health Protection Program Public Workshop	San Pablo Community Center, 2450 Rd 20, San Pablo, CA 94806	28

[11] http://www.baaqmd.gov/plans-and-climate/planning-healthy-places

May 21, 2018	AB 617 Community Health Protection Program Public Workshop	Dr. Martin Luther King Jr. Library, 150 E. San Fernando St, San Jose, CA 95112	6
May 24, 2018	AB 617 Community Health Protection Program Public Workshop	Fairfield Community Center, 1000 Kentucky St, Fairfield, CA 94533	8
June 4, 2018	AB 617 Community Health Protection Program Public Workshop	Cal State East Bay Oakland Center, 1000 Broadway Avenue, Oakland, CA 94607	12
June 20, 2018	AB 617 Community Health Protection Program Public Workshop	Air District Offices, 375 Beale St, Yerba Buena Rm, San Francisco, CA 94105	34

Workshop attendees learned about the public health context for addressing air quality concerns at the local level, the goals of AB 617, and the process for identifying, prioritizing and selecting communities. There was opportunity for discussion, where workshop participants could ask questions and share concerns. Following the presentations, Air District staff facilitated interactive sessions where attendees could prioritize communities for selection and early action, speak with local inspectors about local sources of pollution, guide criteria for selection and shape program objectives.

Workshop attendees rated the workshops well. All (100%) of respondents rated the facilitation and overall structure of the workshops as good to excellent. Most rated the clarity of information presented (88%) and the opportunity to ask questions (95%) as good to excellent. They found the following as the most valuable components of the workshops:

- Networking
- Interacting with Air District staff
- Learning about the intent of AB 617 and the data through presentations and handouts
- Interactive stations
- Learning from community residents
- The public health context

Respondents offered the following as opportunities for improvement:

- Better outreach/more resident attendance
- Better link the public health presentation to air quality
- Inform attendees about what selected communities will get out of being selected as an AB 617 community
- More time for Q&A

To ensure participation beyond the workshops, the Air District posted two interactive topics on Open Air Forum, the Air District's online community engagement platform. Each topic included information to inform the public about AB 617, the process for community selection and to provide an opportunity for the community to inform and guide our community selection. The goal of the first topic was to allow our community to weigh in on our community selection criteria; this topic had 254 visitors and 30 responses from the public. The survey asked respondents to rate their level of support for the methods proposed to identify candidate communities. The respondents overwhelmingly strongly support the use of CARE (81%), additional impacts (73%), and other large sources (73%). Respondents were asked to provide additional criteria that the Air District should consider, respondents recommend that we consider:

- Odors and wood smoke
- Areas with heavy idling and proximity to multiple transportation systems
- History of regulatory violations
- Socio-economic status, e.g. income, race, equity

- Historical contamination: military bases & heavy industry

Respondents were also provided the opportunity to recommend a community that was not captured by our proposed methods. Eleven out of the thirty respondents offered recommendations; however, all but one recommended community were included as candidate communities in the Air District's April 26th submittal to CARB on recommended candidate communities. (Benicia, Pittsburg, Vallejo, Mare Island, Pt. Richmond, Rodeo-Crocket, Alviso, and parts of Napa).

The one community not recommended was San Geronimo Valley in Marin County. Although heavily impacted by woodsmoke, San Geronimo Valley was not included because it is not considered a high cumulative exposure burden area. Like many other rural areas in Marin, Sonoma and Napa, woodsmoke is a considerable concern. For some communities, especially the rural communities tucked into the many valleys of Marin, Sonoma, and Napa, residential wood burning is the only significant source of $PM_{2.5}$. These areas may also have health burdens and high levels of poverty, which air pollution can exacerbate, especially if residents have limited access to health care. However, AB 617 is intended to address cumulative air quality and health burden areas; those areas that are impacted by multiple sources of air pollution, such as large industrial sources, major marine ports, congested freeways and roadways and/or rail. As described on page 9, although we are not recommending any community exclusively impacted by woodsmoke in this submittal, the Air District is committed to reducing woodsmoke in communities impacted by the effects of wood burning. We will continue to address residential woodsmoke through additional incentive programs that provide funding to residents to help replace older and highly polluting fireplaces and wood-burning stoves with cleaner alternatives and we are considering further strengthening of our Wood-Burning Devices Rule.

The second topic included on Open Air Forum closed on June 29th. This topic allowed community members to shape community prioritization for years 2-5. The second topic had 150 visitors and 33 responses from the public.

The survey asked respondents to rate their level of support for the criteria proposed to select communities for action. The respondents' support was variable – 41% somewhat to strongly support our selection criteria, 16% indicated that they were neutral and 44% somewhat to strongly oppose the selection criteria proposed.

Respondents were asked to provide additional criteria that the Air District should consider, respondents recommend that we:

- Include wood smoke
- Consider areas that are out of range of current Air District monitors
- Consider areas within proximity to agricultural pesticides, vehicle exhaust and/or diesel particulate matter
- Prioritize income, access to health care, race, crime rates, access to public transit, access to open spaces and other social determinants of health

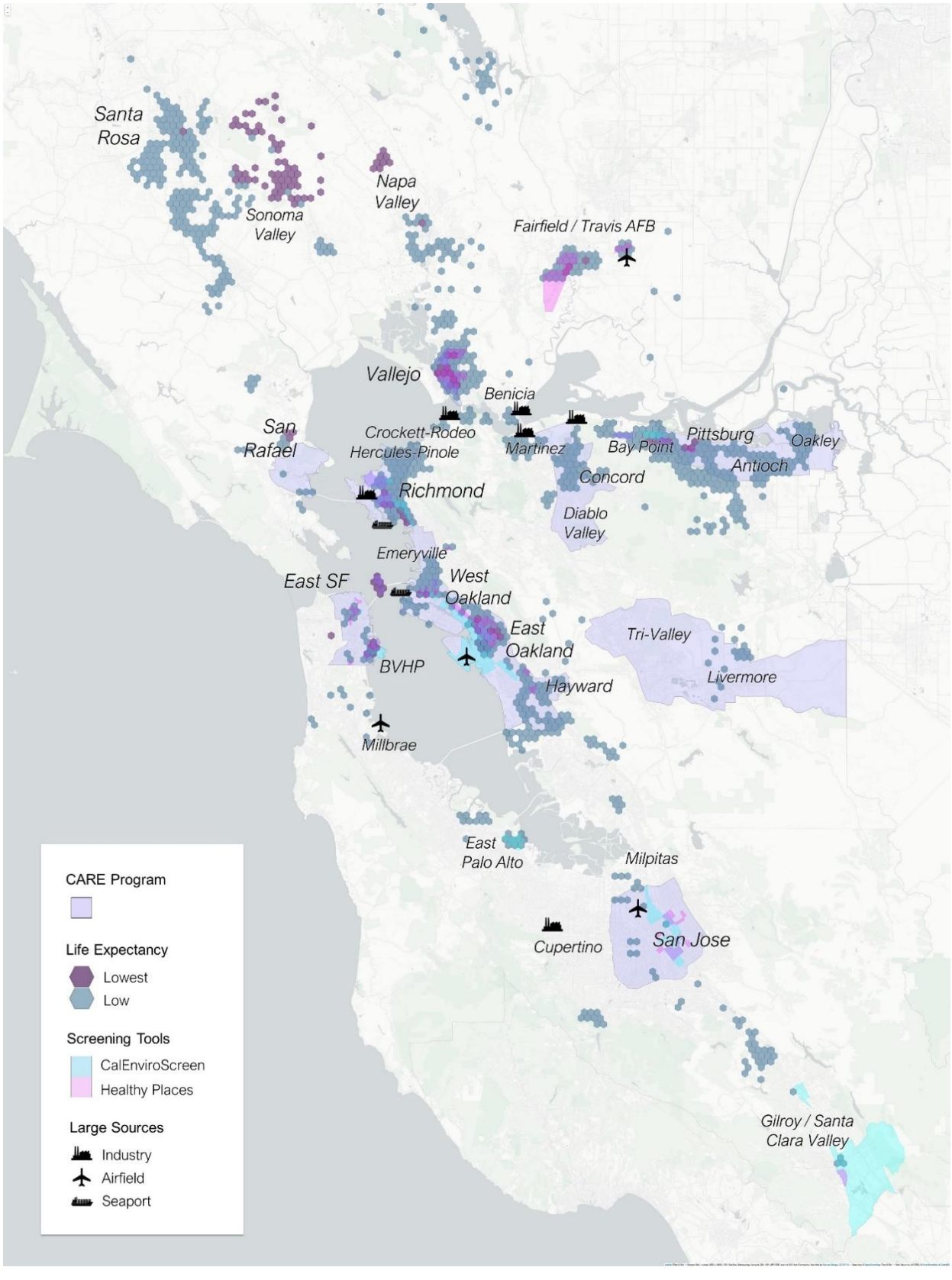
Respondents were also asked to share the sources of air pollution that concern them the most. The most common response was wood smoke, additional responses were:

- Refineries
- Emissions from mobile sources, such as cars in heavily traveled corridors and diesel particulate matter

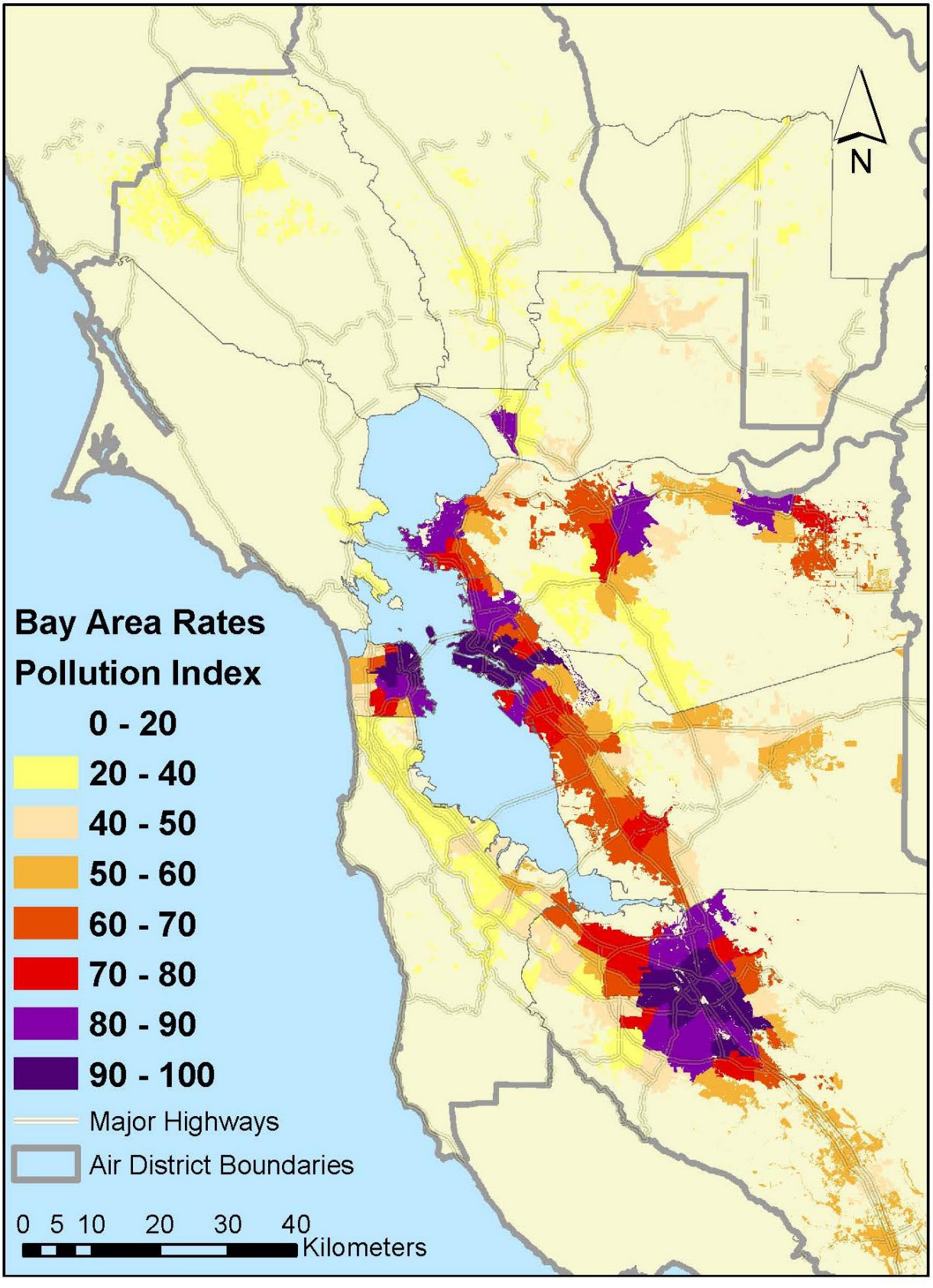
Respondents also shared their largest health concerns from heavy air pollution. The most common responses were:

- Asthma
- Emphysema
- Lung cancer
- Allergies
- Persistent coughs

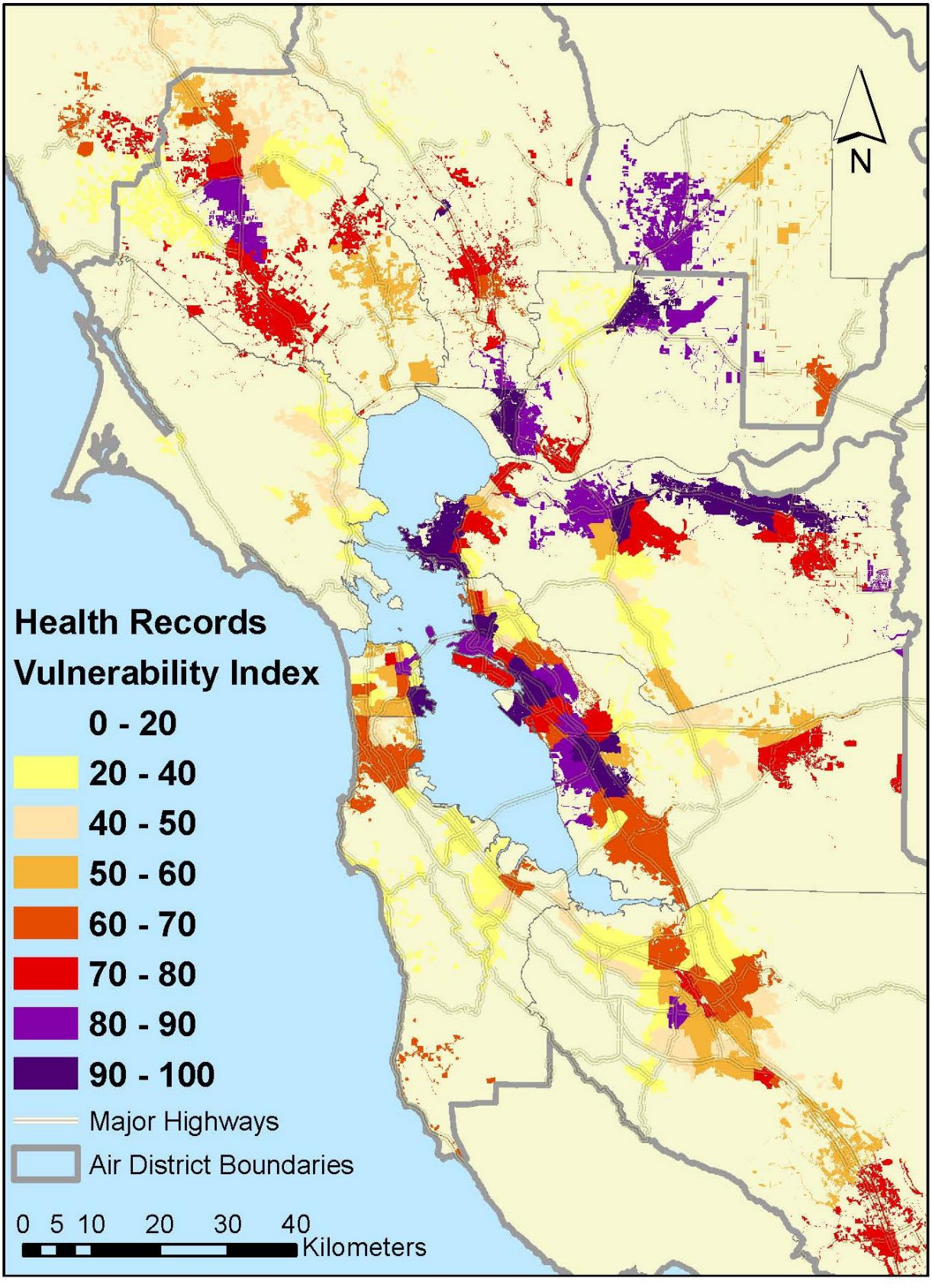
Attachment A. High Cumulative Exposure Burden Communities, SF Bay Area



Attachment B. CARE Pollution Index, SF Bay Area



Attachment C. CARE Health Vulnerability Index, SF Bay Area



Attachment D: Community Prioritization Methodology

Air Quality

Metrics:

1. **CARE Pollution Index**: modeled concentrations of cancer risk, fine PM, and ozone. Air pollution levels are mapped to zip code areas. Regional modeling for toxic air contaminant levels in 2015 were used to estimate cancer risk. Annual average $PM_{2.5}$ above background levels was estimated using regional air quality modeling of representative days in 2010 and 2011, and observations from San Francisco Bay Area monitoring sites. Mean 8-hour ozone above background levels was interpolated from observations in 2010 and 2011 at monitoring sites only.
2. **$PM_{2.5}$ Monitoring Data:** Many metrics describing $PM_{2.5}$ concentrations measured at monitoring sites in the Bay Area from 2013-2017 were evaluated, including: the maximum, mean, and 98th percentile of the 24-hour concentrations each year, the annual means, and the 24-hour and annual design values. Using many metrics helps assess sites that might exhibit differing concentration distributions, such as a few very high values versus a high annual mean. Health research data show that both acute and chronic exposure to $PM_{2.5}$ are issues of concern.
3. **Toxics Monitoring Data:** Annual means of 24-hour concentrations of several key toxic air contaminants (including toluene, m/p-xylene. o-xylene, ethyl benzene, 1,3-butadiene and, benzene) concentration measurements from monitoring sites in the San Francisco Bay Area. Data are for the 2013-2017 period.

Methodology:

a. Pollution index data by zip codes were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff reviewed maps and noted geographic areas that had high, medium and low levels of pollution.
b. $PM_{2.5}$ monitoring data were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff gave geographic areas a high/medium/low ranking based on a combination of $PM_{2.5}$ metrics. Areas of expected high cumulative exposure burden that do not have a $PM_{2.5}$ monitoring site were either extrapolated from a nearby site depending on meteorology and topography, or the $PM_{2.5}$ metric was not used. The latter type of areas was scored only on the available information from CARE.
c. Toxics (toluene, m/p-xylene. o-xylene, ethyl-benzene, 1,3-butadiene and benzene) monitoring data were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff gave each geographic area a high/medium/low ranking based on the data. Areas of expected high cumulative exposure burden that do not have a toxics monitoring site were either extrapolated from a nearby site, depending on meteorology and topography, or the toxics metric was not used. The latter type of areas was scored only on the available information from CARE and, if available, $PM_{2.5}$ monitoring sites.

Health Burden

Metrics:

1. **CARE Vulnerability Index**: Mortality rates, ER visits, and hospitalizations attributed to causes known to be aggravated by air pollution were used to estimate health vulnerability. Death records are for years 2008-2010. Emergency room visits, and hospital records are for years 2009-2011.
2. **Life Expectancy:** Life expectancy data are obtained from the California Healthy Places Index project. Places that scored within the lowest 50 percent are classified as 'low life expectancy,' and those within the lowest 25 percent are classified as 'lowest life expectancy.'

Methodology:

a. Vulnerability index data by zip codes were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff reviewed maps and selected geographic areas that have high, medium and low levels of health vulnerability.
b. Lowest and low life expectancy data by census tract block groups were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. The life expectancy results were mapped to display concentrations of low life expectancy in the region. Air District staff reviewed maps and selected areas in the AB 617 universe that have high, medium and low levels of life expectancy.

Other Information Used in Understanding High Cumulative Exposure Burden Communities

1. **Community Capacity** – Current levels of community capacity were considered in selecting first year action communities. Community capacity means having relationships with community members, established partnerships and the ability to share information. It means having the tools needed for authentic empowered participation in the work. It also means having some significant levels of knowledge, research and previous planning or other studies that can be leveraged as we moved forward in a community.

2. **Sources** – *Total sources:* Total permitted stationary sources, by size and type; mobile sources, including freeways, roadways, rail, distribution centers.

3. **Cal Enviro Screen 3.0** – CalEnviroScreen is a mapping tool that uses environmental, health, and socioeconomic information from state and federal government sources to identify California communities that are disadvantaged. Disadvantaged communities include those most affected by multiple sources of pollution and those where the population is especially vulnerable to pollution's effects. CalEnviroScreen 3.0 scores are used to rank and map every census tract in the state by percentile. Census tracts in the San Francisco Bay Area that were ranked within the top 25 percent of statewide scores were included in the Air District's recommendation of high cumulative exposure areas. Those areas with the highest scores across all metrics, and individual metrics, including socio-economic, were noted.

4. **Healthy Places Index** – The California Healthy Places Index was developed by the Public Health Alliance of Southern California. The index includes diverse non-medical economic, social, political and environmental factors that influence physical and cognitive function, behavior and disease. The total score is used to screen for places with high health burden. Census tracts in the San Francisco Bay Area that rank within the top 25 percent of statewide scores were included in the Air District's recommendation of high cumulative exposure areas. Those areas with the highest scores across all metrics, and individual metrics including socio-economic and racial demographics, were noted.

5. **Proximity of emissions to sensitive receptors** – **The Environmental Justice Screening Method** (EJSM) was developed for the California Air Resources Board (CARB) to examine cumulative impacts and social vulnerability within California regions, as well as to identify overburdened communities. The Air district used the hazard proximity portion of this tool to identify the areas that have sensitive receptors near sources of significant emissions since this measure of exposure is not included in the other environmental justice screening tools. More Information about the calculation of the hazard proximity scores is located here: https://www.arb.ca.gov/research/apr/past/11-336.pdf.

Final Analysis and Recommendations

The main metrics describing air quality and health issues were combined to reveal a group of geographic areas that showed consistently high air quality and health burdens, including West Oakland, the Richmond area, East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo. Given the legislatively required deadlines for year one activities, West Oakland and Richmond areas were selected for year 1 action; West Oakland for a community emission reduction program and the Richmond area for a community air monitoring plan. The remaining communities, East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo are recommended for years 2-5. Note that the recommendations for years 2-5 were based on the best data currently available to the Air District. As we continue to improve our data on health burden and air pollution exposure, the list of recommended communities may change. This list will be re-evaluated every year.

Historical and ongoing activities in West Oakland and Richmond provide opportunities that the Air District and partner communities can leverage to make a successful community emission reduction program and/or community air monitoring plans feasible. In West Oakland, there has been over a decade of monitoring and policy work done to understand and reduce exposure to air pollution in West Oakland, by the Air District, West Oakland Environmental Indicators Project and other community groups, and scientific researchers. This body of knowledge, and the established relationship between the Air District and the West Oakland Environmental Indicators Project positions West Oakland as a community most likely to be able to meet the legislated deadlines for the first community emission reduction program process. There are several air monitoring and air quality data analysis efforts ongoing in Richmond. These efforts can be leveraged to ensure the Richmond community air monitoring plan is feasible and successful in the short state-mandated time frame. One such effort is the expansion of the fence-line monitoring system at the Chevron Refinery. Chevron has proposed to expand its fence-line monitoring system to meet the requirements of the Air District's Regulation 12, Rule 15 (Rule 12-15). Additionally, as part of the Rule 12-15 process, the Air District committed to expand efforts to characterize levels of air pollutants in communities near refineries by adding an additional fixed monitoring site. The Air District is assisting the City of Richmond on an EPA Community Scale Toxics Grant, to evaluate and interpret air toxics data collected at sites near the Chevron Refinery. The Air District is also working with the Asian Pacific Environmental Network community organization to implement a $PM_{2.5}$ community-led sensor project in the Richmond area as one of the Northern California communities participating in South Coast Air Quality Management District's EPA STAR Grant: "Engage, Educate and Empower California Communities on the Use and Applications of "Low-cost" Air Monitoring Sensors".[12] Finally, there are current and historical air monitoring projects the Air District worked on with researchers and other governmental organizations that will provide data and other information to inform year 1 monitoring planning efforts.

[12] More information on EPA Star Grant may be found here: http://www.aqmd.gov/aq-spec/research-projects

Attachment E. Final Submittal Requirements, California Air Resources Board

Air District final submittal: Public process for determination of recommended communities

Due: July 31, 2018

Air districts recommending communities for AB 617 2018 Community Selections must provide documentation addressing the following elements in the final submittal:

1) Describe (including geographic boundaries) the communities from the preliminary list that the air district is recommending for inclusion in year one for:

a) A community air monitoring plan

b) A community emissions reduction program

2) In accordance with statute, CARB staff are required to return to the Board annually for recommendations on additional communities. Describe the communities from the preliminary list the air district is recommending for inclusion in subsequent years, recognizing that additional data and public input may result in updates to the final recommendations for each year:

a) Community air monitoring and/or community emissions reduction programs in years 2 through 5

b) Community air monitoring and/or community emissions reduction programs in years 6 and beyond

3) Provide information on the following questions for each community recommended for year 1 and communities being considered for years 2-5:

a) Has work already started in the community?

b) What are the anticipated resource needs for each recommended community for both the air district and the community?

c) Are emissions data available to develop a community level emission inventory?

4) Describe the public process used to identify, then prioritize and select recommended communities? Provide a brief overall summary of comments received and specify how many attendees were at each workshop or meeting.

5) Any additional information the air district would like to provide, including any community recommendations for future year implementation.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson David Hudson and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: July 17, 2018

Re: Public Hearing to Consider Adoption of Proposed Regulation 6, Particulate Matter - Common Definitions and Test Methods; Proposed Amendments to Regulation 6, Particulate Matter, Rule 1: General Requirements; Proposed Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout; and Approval of a CEQA, Negative Declaration

RECOMMENDED ACTION

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

- Adopt new Regulation 6: Particulate Matter – Common Definitions and Test Methods
- Adopt proposed amendments to Regulation 6, Rule 1: General Requirements;
- Adopt new Regulation 6, Rule 6: Prohibition of Trackout;
- Adopt proposed amendments to Volume 1: Enforcement Procedures, Part 1: Assessment of Visible Emissions Opacity; and
- Approve a Negative Declaration, pursuant to the California Environmental Quality Act (CEQA), for this rule-making project.

DISCUSSION

The proposed amendments to Regulation 6, Particulate Matter, Rule 1: General Requirements address a commitment by the Air District's Board of Directors to review Rule 6-1, identified as control measure SS31 in the Air District's 2017 Clean Air Plan. Prior to the 2017 Clean Air Plan, Air District staff developed a focused study to address the Bay Area's particulate matter challenges; in November 2012, staff published a report entitled Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area. Proposed amendments to Regulation 6, Rule 1 and proposed new Regulation 6, Rule 6 are among the actions needed to reduce particulate matter emissions and improve public health.

New Regulation 6 is proposed to provide common definitions and test methods that apply to existing Regulation 6 Particulate Matter rules and any other source-specific rules as they are developed in the future. A Staff Report provides background information on new Regulation 6 and a summary of the rationale for updating Regulation 6, Rule 1 (Rule 6-1). Background research on Bay Area particulate matter emissions is provided in Attachment 1 of the report. A second Staff Report has been developed to provide specific information supporting the draft amendments to Rule 6-1. The two proposed rules and two staff reports are intended to provide

the public with information on both new Regulation 6 and draft amendments to Rule 6-1, in advance of Public Hearing. Requirements for bulk material storage and handling facilities have been included in amendments to Rule 6-1.

A third rule has been developed in tandem: new Regulation 6, Rule 6: Prohibition of Trackout (Rule 6-6) is being proposed to prohibit trackout of dirt and other solids onto public roadways adjacent to large construction sites. A separate Staff Report has been developed for proposed new Rule 6-6 to provide supporting information.

RULE DEVELOPMENT PROCESS

Since July 2010, Air District staff has engaged in an extensive and comprehensive process involving a wide range of stakeholders. This has resulted in proposed new Regulation 6, Particulate Matter-Common Definitions and Test Methods, proposed amendments to Regulation 6, Particulate Matter, Rule 1: General Requirements, and proposed new Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout.

In January 2017, draft rules and workshop reports were issued to the public:

- New Regulation 6, Particulate Matter-General Provisions, Definitions and Test Methods
- Draft Amendments to Regulation 6, Rule 1: General Requirements
- New Regulation 6, Rule 6: Prohibition of Trackout
- New Regulation 6, Rule 7: Roofing Asphalt
- New Regulation 6, Rule 8: Bulk Material Storage and Handling

Eight public workshops were held in late January and February 2017. Staff briefed the Stationary Source Committee in April 2017, and again in December 2017. Additionally, numerous meetings with stakeholders occurred during the comment period after the workshops. As a result of input, staff incorporated requirements for bulk material storage and handling (previously in Regulation 6, Rule 8) into the amendments to Rule 6-1, and determined that draft Rule 6-7 requires further analysis prior to proposing a rule to the Board of Directors. The rest of the rules and amendments - proposed amendments to Rule 6-1 and the two new regulations, Regulation 6 and Regulation 6, Rule 6 - and associated staff reports and supporting documents were published on the Air District web site in April 2018. Staff received substantive comments regarding licensing for blasting operations and concern for stringent dust limits on cleanup operations. Staff revised the rule language and re-published the entire package of information on the Air District web site in June 2018, providing an additional period for further comment.

Pursuant to the California Environmental Quality Act, the Air District prepared a CEQA initial study for this suite of proposed amendments and new particulate matter rules. The initial study concludes that there are no potential significant adverse environmental impacts associated with the proposed suite of rules. Notice is hereby given that the Air District intends to approve a Negative Declaration for the rule pursuant to Public Resources Code section 21080(c) and CEQA Guidelines section 15070 et seq.

BUDGET CONSIDERATIONS/FINANCIAL IMPACT

Provisions in this suite of rule proposals will have minor impacts on Engineering, Meteorology and Measurements, and Compliance and Enforcement. In each case, the organization will fit small intermittent increases in work into existing workload priorities. No increase in personnel or costs is anticipated. Additional tools for Compliance and Enforcement inspectors to measure dust plumes are expected to cost less than $1,000. Compliance and Enforcement inspectors will not proactively monitor construction site trackout, but will respond to and investigate citizen complaints as they occur.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Guy Gimlen
Reviewed by: Victor Douglas

Agenda 16A: Public Hearing Notice
Agenda 16B: Regulation 6 Particulate Matter – Common Definitions and Test Methods
Agenda 16C: Regulation 6 Particulate Matter – Rule 1 General Requirements Index
Agenda 16D: Regulation 6 Particulate Matter – Rule 6 Prohibition of Trackout Index
Agenda 16E: Staff Report – Particulate Matter – Proposed New Regulation 6: Common Definitions and Test Methods
Agenda 16F: Staff Report – Particulate Matter – Proposed Amendments to Regulation 6, Rule 1: General Requirements
Agenda 16G: Staff Report – Particulate Matter – New Regulation 6, Rule 6: Prohibition of Trackout
Agenda 16H: Socioeconomic Impact Analysis: Proposed New Regulation 6 (Common Definitions and Test Methods) and Proposed Amendments to Regulation 6, Rule 1 (General Requirements)
Agenda 16I: Socioeconomic Impact Analysis: New Regulation 6, Rule 6: Prohibition of Trackout
Agenda 16J: CEQA: Notice of Intent to Adopt Negative Declaration
Agenda 16K: CEQA Initial Study and Draft Negative Declaration
Agenda 16L: Volume 1 Enforcement Procedures Part 1 Assessment of Visible Emissions Opacity

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PUBLIC HEARING NOTICE

June 20, 2018

TO: INTERESTED PARTIES

FROM: EXECUTIVE OFFICER / APCO

SUBJECT: **PUBLIC HEARING: PROPOSED NEW REGULATION 6, PARTICULATE MATTER—COMMON DEFINITIONS AND TEST METHODS; PROPOSED AMENDMENTS TO REGULATION 6, RULE 1: GENERAL REQUIREMENTS; PROPOSED NEW REGULATION 6, RULE 6: PROHIBITION OF TRACKOUT; AND CONSIDER THE ADOPTION OF THE NEGATIVE DECLARATION PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY**

On **Wednesday, August 1, 2018**, the Board of Directors of the Bay Area Air Quality Management District will conduct a public hearing at the Air District Headquarters' Board Room, 375 Beale Street, San Francisco, California, at 9:30 a.m.

The Board will consider adoption of

- New Regulation 6, Particulate Matter—Common Definitions and Test Methods;
- Proposed amendments to Regulation 6, Rule 1: General Requirements;
- New Regulation 6, Rule 6: Prohibition of Trackout; and
- A Negative Declaration pursuant to the California Environmental Quality Act (CEQA).

Proposed new Regulation 6 would provide common definitions and test methods that apply to existing Regulation 6 rules and any other source-specific rules as they are developed in the future. The Staff Report provides background information on new Regulation 6 and a summary of the rationale for updating Regulation 6, Rule 1 (Rule 6-1). Background research on Bay Area particulate matter emissions is provided in Attachment 1 of the report. A separate Staff Report provides supporting information specific to the proposed amendments to Rule 6-1. Requirements for

bulk material storage and handling facilities have been included in the proposed amendments to Rule 6-1.

A new Regulation 6, Rule 6: Prohibition of Trackout (Rule 6-6) is being proposed to prohibit trackout of dirt and other solids onto adjacent public roadways. A third Staff Report provides supporting information for proposed new Rule 6-6.

Proposed amendments to Rule 6-1 address a commitment by the Air District's Board of Directors to review Regulation 6, Rule 1: General Requirements, identified as Control Measure SS31 in the Air District's 2017 Clean Air Plan. Prior to the 2017 Clean Air Plan, Air District staff studied the Bay Area's particulate matter challenges and summarized the findings in a November 2012 report entitled Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area. These proposed amendments to Regulation 6, Rule 1 and proposed Regulation 6, Rule 6 are the first of many steps needed to reduce particulate matter emissions and improve public health.

Proposed new Rule 6-6 will be considered with proposed new Regulation 6 and amendments to Rule 6-1 at the same Public Hearing on Wednesday, August 1, 2018. The proposed rules would apply throughout the nine-county jurisdiction of the Bay Area Air Quality Management District.

Pursuant to the California Environmental Quality Act (Public Resources Code § 21000 et seq.), an Initial Study for the proposed regulations and amendments has been conducted, concluding that the proposals would not have significant adverse environmental impacts. Notice is hereby given that the Air District Board of Directors will consider adoption of a Negative Declaration for the proposed regulations and amendments pursuant to Public Resources Code section 21080(c) and CEQA Guidelines section 15070 et seq. Written comments on the CEQA analysis are being accepted until close of business on Friday, July 6, 2018 and should be directed to Guy Gimlen at 375 Beale St., San Francisco, CA 94105 or ggimlen@baaqmd.gov. Verbal comments are welcome up to the day of, and during, the Public Hearing.

A Public Hearing Notice, the CEQA Initial Study and proposed Negative Declaration, text of the proposed regulations and amendments, staff reports and other supporting documents are available at the Air District's headquarters and in the Rules Under Development table on the Air District's website at http://www.baaqmd.gov/ruledev. Copies may also be requested by calling Guy Gimlen at (415) 749-4734, or via e-mail to ggimlen@baaqmd.gov. **Written comments on the proposed new rule and proposed amendments will be accepted until close of business on Friday, July 6, 2018** and should be directed to Guy Gimlen at 375 Beale St., San Francisco, CA 94105 or ggimlen@baaqmd.gov**.** Verbal comments are welcome up to the day of, and during, the Public Hearing.

REGULATION 6
PARTICULATE MATTER-
COMMON DEFINITIONS AND TEST METHODS

INDEX

REGULATION 6
PARTICULATE MATTER
COMMON DEFINITIONS AND TEST METHODS

6-100 GENERAL

6-101 **Description:** This Regulation provides common definitions, administrative requirements and test methods for implementing Regulation 6 Rules. Regulation 6 and the Rules it contains establish emission limits and other requirements to reduce particulate matter in the ambient air.

6-102 **Expectation of Compliance:** Any violation of any of the requirements in the Regulation 6 Rules is subject to enforcement action under the applicable provisions of the California Health & Safety Code. It is the expectation of the Air District that all persons subject to any requirements in the Regulation 6 Rules will monitor their operations in a manner sufficient to enable them to prevent violations from occurring and to take prompt corrective action to prevent ongoing or recurring violations.

6-110 **General Exemption, Agricultural Sources:** Agricultural sources are exempt from Regulation 6 rules as described in Regulation 1-110.9.

6-200 DEFINITIONS

6-201 **Active Operations:** Any activity with the potential to create particulate matter emissions from any source or fugitive dust emissions.

6-202 **Bulk Material:** Any unpackaged sand, soil, gravel, aggregate, solid construction material, solid industrial chemical or other unpackaged solids less than 2 inches in length or diameter.

6-203 **Bulk Material Site:** Any site with one or more stockpiles of bulk material greater than 5 feet high or with a footprint greater than 100 square feet.

6-204 **Fugitive Dust:** Any of the following solid particles that are not collected by a capture system and emitted from a vent or stack, and become airborne and entrained in the ambient air because of human disturbance or wind action:

204.1 Soil, dirt, sand, or other naturally occurring fine-grained mineral material;

204.2 Bulk Material;

204.3 Dust, pulverized debris, or other particles generated by mechanical disturbance or abrasion of building materials during construction or demolition activities, including but not limited to cutting, sawing, drilling, and grinding;

Fugitive dust does not include combustion exhaust.

6-205 **Opacity**: The degree to which transmission of light through a gas is reduced by air contaminants in the gas.

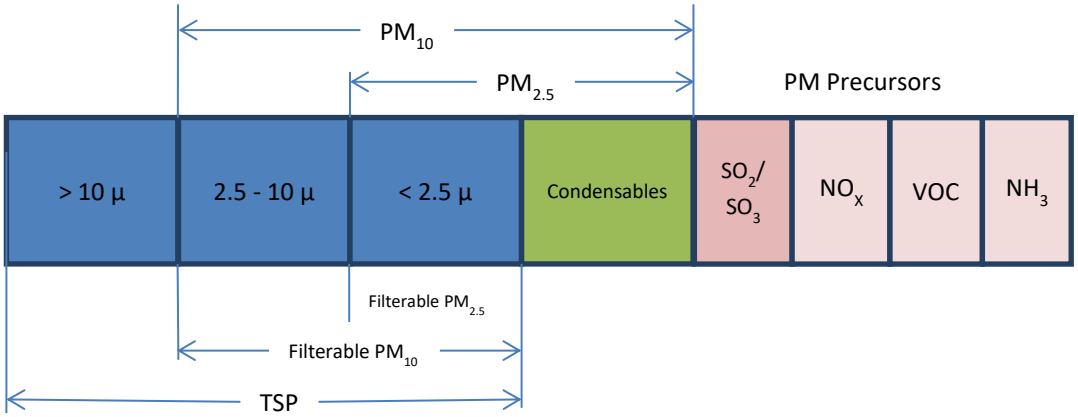
Opacity is measured in three different ways, depending on the situation:

205.1 Black or dark colored emissions are usually assessed using the Ringelmann Chart ranging from 0 being completely transparent to 5 being completely opaque;

205.2 White or light-colored emissions are usually assessed using percent (%) opacity as the degree to which an observer's view is obscured by the emission, usually in increments of 5 percent;

205.3 When using an opacity sensing instrument, opacity is defined in Regulation 1-218 as the decrease in the transmission of light through a gas stream, as indicated by the expression (1-P/Po) where Po is the radiant power initially directed at the emission being measured, and P is the radiant power received after passing through the emission.

6-206 **Particulate Matter:** Any material that is emitted as liquid or solid particles, or as gaseous material that becomes liquid or solid particles at the testing temperatures specified in the source test method; excluding uncombined water vapor, water mist or steam.



206.1 **Total Suspended Particulate (TSP**): Any particulate matter that can be filtered out of a gas stream as measured using EPA Method 5 (or alternate method approved by the APCO).

206.2 **PM_{10}:** Particulate matter with an aerodynamic diameter equal to 10 microns or less, including both filterable solid or liquid particles with a diameter of 10 microns or less, and gaseous emissions that condense to form such particles at ambient temperatures. These solid and/or liquid particles are identified using EPA Test Method 201A and 202. If necessary, alternate approved test methods may be used as described in Regulation 2-1-603.

206.3 **$PM_{2.5}$:** Particulate matter with an aerodynamic diameter equal to 2.5 microns or less, including both filterable solid or liquid particles with a diameter of 2.5 microns or less, and gaseous emissions that condense to form such particles at ambient temperatures. These liquid and/or solid particles are identified using EPA Test Method 201A and 202. If necessary, alternate approved test methods may be used as described in Regulation 2-1-603.

206.4 **Filterable PM_{10}:** Particulate matter with an aerodynamic diameter equal to 10 microns or less that can be filtered out of a gas stream at the source's normal operating temperature. These particles are identified using EPA Test Method 201A. If necessary, alternate approved test methods may be used as described in Regulation 2-1-603.

206.5 **Filterable $PM_{2.5}$:** Particulate matter with an aerodynamic diameter equal to 2.5 microns or less that can be filtered out of a gas stream at the source's normal operating temperature. These particles are identified using EPA Test Method 201A. If necessary, alternate approved test methods may be used as described in Regulation 2-1-603.

206.6 **Condensable PM:** Liquid droplets that coalesce, or gaseous emissions that condense to form liquid or solid particles. These liquid and/or solid particles are identified using EPA Test Method 202. If necessary, alternate approved test methods may be used as described in Regulation 2-1-603.

206.7 **PM Precursors:** Air pollutant chemicals that can react with each other to form solid or liquid particles.

6-207 **Ringelmann Chart:** The chart used to measure opacity published by the United States Bureau of Mines.

6-208 **Stockpile:** An open or unenclosed storage pile of bulk material, external to any barn, pit or silo.

6-209 **Visible Emissions:** As defined in Regulation 1-232, emissions that are visually perceived by an observer.

6-210 **Workday:** Any period, typically 8 - 12 hour shifts, when active operations occur on the site.

6-300 STANDARDS

6-400 ADMINISTRATIVE REQUIREMENTS

6-500 MONITORING AND RECORDS

6-501 **Sampling Facilities and Instruments Required:** Any person subject to Regulation 6 and to any of the Rules set forth under Regulation 6 shall provide sampling facilities and install instruments as required pursuant to the provisions of Regulation 1.

6-502 **Data, Records and Reporting:** Any person monitoring emissions in accordance with the requirements of Regulation 1 shall keep records, report emission excesses and provide summaries of data collected as required by Regulation 1.

6-600 MANUAL OF PROCEDURES

6-601 **Assessment of Visible Emissions:** Assessing whether there are visible emissions from a facility, source, or operation shall be made by positioning the sun behind the observer, as described in EPA Method 9. Assessing the cumulative time that emissions are visible during a specified observation period shall be conducted according to the procedures specified in EPA Method 22.

6-602 **Assessment of Opacity:** Assessing the opacity of a visible emission shall be conducted according to the procedures specified in the Manual of Procedures Volume 1, Part 1 (referencing EPA Test Method 9; and Method 203A, Method 203B, or Method 203C), or by using an opacity sensing instrument meeting the requirements of MOP Volume V.

6-603 **Particulate Matter Sampling and Sampling Facilities:** Emissions testing under this Regulation, including determining the presence or amount of particulate matter being emitted, shall be conducted according to the procedures specified in this rule or procedures specified in other Regulation 6 rules, and meeting the requirements of the MOP.

REGULATION 6
PARTICULATE MATTER-
RULE 1
GENERAL REQUIREMENTS

INDEX

REGULATION 6
PARTICULATE MATTER
RULE 1
GENERAL REQUIREMENTS

~~(Renumbered and Renamed December 5, 2007)~~

6-1-100 GENERAL

6-1-101 Description: ~~-~~The purpose of this Regulation is to limit the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, emission concentrations, visible emissions and opacity.

6-1-102 Applicability of General Provisions: The general provisions and definitions in Regulation 1 and Regulation 6 shall apply to this rule.

6-1-110 Exemptions for Activities Subject to Other Rules and Regulations:

110.1 ~~,~~ Temporary Sandblasting Operations: The provisions of this rule shall not apply to Temporary Sandblasting operations ~~are exempt from the provisions of this Rule~~. Such operations are subject to the provisions of Regulation 12, Rule 4.

(Adopted July 11, 1990)

110.2 ~~**Exemption,**~~ Open Outdoor Fires: ~~-~~The provisions of this rule shall not apply to emissions arising from open outdoor fires. Such open outdoor fires are subject to the provisions of Regulation 5.

(Adopted December 19, 1990)

110.3 Wood Burning Devices: The provisions of this rule shall not apply to sources subject to the provisions of Regulation 6, Rule 3.

110.4 Metal Recycling and Shredding Operations: The provisions of this rule shall not apply to sources subject to the provisions of Regulation 6, Rule 4.

~~**6-1-111 Exemption, Open Outdoor Fires:** The limitations of this rule shall not apply to emissions arising from open outdoor fires.~~

6-1-111 Limited Exemption, Blasting Operations: Blasting operations that are conducted by certified blasters who have met the blasting ordinances and requirements for licensing and permitting by the State of California Department of Industrial Relations Division of Occupational Safety and Health or other applicable local permitting authority are not subject to Sections 6-1-307 and 6-1-506.

6-1-112 Limited Exemption, Portland Cement Manufacturing: Sections 6-1-307, 310 and 311 shall not apply to particulate emissions from sources subject to the provisions of Regulation 9, Rule 13.

6-1-113 Limited Exemption, Total Suspended Particulate (TSP) Concentration and Weight Limitations: Sections 6-1-310.2, 311.2 and 504 shall not apply to particulate matter emissions from the following sources:

113.1 Commercial cooking equipment subject to the provisions of Regulation 6, Rule 2.

113.2 Salt processing operations whose TSP emissions are greater than 99 weight percent salt.

6-1-114 Limited Exemption, Total Suspended Particulate (TSP) Emission Limits for Fuel Combustion: Sections 6-1-310.2 and 311.2 shall not apply to particulate matter emissions from the following sources:

114.1 Gas-, liquid- and solid-fuel fired indirect heat exchangers, including furnaces, heaters, boilers, gas turbines and supplemental fuel-fired heat recovery steam generators, but excluding Carbon Monoxide Boilers downstream of Petroleum Refinery Fluid Catalytic Cracking Unit regenerators.

114.2 Gas-fuel fired control devices that control only gaseous emissions.

114.32 Section 6-1-504 shall not apply to gas-fuel fired indirect heat exchangers or gas-fuel fired control devices that control only gaseous emissions. Liquid- and solid-fuel fired indirect heat exchangers shall remain subject to Section 6-1-504.

6-1-115 Limited Exemption, Total Suspended Particulate (TSP) Concentration Limitation: Section 6-1-310.2 shall not apply to particulate emissions from a sewage treatment plant solid waste incinerator abated by a wet scrubber with an Air District Permit to Operate until July 1, 2025.

6-1-116 Limited Exemption, Total Suspended Particulate (TSP) Limits: Section 6-1-310.2 and 311.2 shall not apply to particulate emissions from a carbon monoxide boiler abated by a water scrubber with an Air District Permit to Operate.

6-1-117 Limited Exemption, Total Suspended Particulate (TSP) Limits: Section 6-1-310.2 and 6-1-311.2 shall not apply to particulate emissions from a petroleum coke calcining unit abated by a baghouse with an Air District Permit to Operate until January 1, 2022.

6-1-200 DEFINITIONS

6-1-201 Active Operations: As defined in Regulation 6-201, any activity with the potential to create particulate emissions from any source or fugitive dust emissions.

6-1-202 Bulk Material: As defined in Regulation 6-202, any unpackaged sand, soil, gravel, aggregate, solid construction material, solid industrial chemical or other unpackaged solids less than 2 inches in length or diameter.

6-1-203 Bulk Material Site: As defined in Regulation 6-203, any site with one or more stockpiles of bulk material greater than 5 feet high or with a footprint greater than 100 square feet.

6-1-2014 Exhaust Gas Volume: The volume of gases discharged from an operation or an emission point, corrected to standard conditions (as defined in Regulation 1-228), excluding water vapor or steam.

6-1-205 Particle: A minute quantity of solid matter or liquid droplet.

~~**6-1-202 Particulate Matter:** Any material which is emitted as liquid or solid particles, or gaseous material which becomes liquid or solid particles at the testing temperatures specified in the Manual of Procedures, excluding uncombined water.~~

6-1-2036 Process Weight: The total weight of all material introduced into an operation, including solid fuels and process air, but excluding (i) liquids and gases used solely as fuels, (ii) air that is not consumed as a reactant or is not critical to the process, (iii) air that is used only for dilution, and (iv) combustion air.

6-1-2047 Process Weight Rate and Exhaust Gas Rate: A rate established as follows:

2047.1 For continuous or long-run, steady-state operations, the total process weight or exhaust gas volume for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portions thereof.

2047.2 For cyclical or batch operations, the total process weight or exhaust gas volume for a period ~~which~~ that covers a complete operation or an ~~integral~~ integer number of cycles, divided by the hours of actual process operation during such period. Where the nature of any process or operation or the design of any equipment is such as to permit more than one interpretation of this section, that interpretation which results in the minimum value for allowable emission shall apply.

6-1-208 Regulated Bulk Material Site: A bulk material site that (i) produces, handles, loads, unloads, stores or uses more than 10 tons per year of bulk materials; and (ii) is subject to an authority to construct and/or permit to operate for bulk material storage and handling issued by the Bay Area Air Quality Management District.

6-1-209 Stockpile: As defined in Regulation 6-208, an open or unenclosed storage pile of bulk material, external to any barn, pit or silo.

6-1-210 Workday: As defined in Regulation 6-210, any period, typically 8 – 12 hour shifts, when active operations occur on the site.

6-1-300 STANDARDS

6-1-301 Ringelmann No. 1 Limitation: Except as provided in Sections 6-1-303, 304 and 306, a person shall not emit from any source for a period or aggregate periods aggregating of more than three minutes in any hour, a visible emission that which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.

(Amended July 11, 1990)

6-1-302 Opacity Limitation: Except as provided in Sections 6-1-303, 304 and 306, a person shall not emit from any source for a period or aggregate periods aggregating of more than three minutes in any hour an emission equal to or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by District regulations.

(Amended July 11, 1990)

6-1-303 Ringelmann No. 2 Limitation: A person shall not emit for a period or aggregate periods aggregating of more than three minutes in any hour, a visible emission that which is as dark or darker than No. 2 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree, nor shall said emission, as perceived by an opacity sensing device in good working order, where such device is required by District regulations, or be equal to ora greater than 40 percent opacity, from the following sources:

303.1 Internal combustion engines of less than 25 liters (1500 in^3) displacement;.

303.2 or any Eengines used solely as a standby source of motive power;

303.23 Laboratory equipment used exclusively for chemical or physical analyses or experimentation;

303.34 Portable brazing, soldering or welding equipment;.

303.4 Deleted July 11, 1990.

(Amended 1/5/83; 7/11/90)

6-1-304 Tube Cleaning: During tube cleaning, and except for three minutes in any one hour, a person shall not emit from any heat transfer operation using fuel at a rate of not less than 148 GJ (140 million BTU) per hour, a visible emission as dark or darker than No. 2 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree, or equal to or greater than 40 percent opacity as perceived by an opacity sensing device in good working order. The aggregate duration of such emissions in any 24-hour period shall not exceed 6.0 minutes per 1055 GJ (one billion BTU) gross heating value of fuel burned during such 24-hour period.

6-1-305 Visible Particles: No A person shall not emit particles from any operation in sufficient number to cause annoyance to any other person where the which particles are large enough to be visible as individual particles at the emission point, or of such size and nature as to be visible individually as incandescent particles. This Section 6-1-305 shall only apply if such particles fall on real property other than that the property of the person responsible for the emission.

6-1-306 Diesel Piledriving Hammers: No person shall emit visible emissions from a Ppiledriving hammers powered by diesel fuel shall comply with one of that exceeds the following standards for a period or aggregate periods of more than four minutes during the driving of a single pile:

306.1 For piledriving hammers other than those specified in Section 306.2, any visible emission A person shall not emit from any diesel piledriving hammer for a period or periods aggregating more than four minutes during the driving of a single pile,

~~a visible emission which~~ that is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree,

306.2 For piledriving hammers utilizing kerosene, smoke suppressing fuel additives and synthetic lubricating oil, and for which fuel usage records are kept as required by Section 6-1-503, any visible emission ~~A person shall not emit from any diesel piledriving hammer for a period or periods aggregating more than four minutes during the driving of a single pile, a visible emission which~~ that is as dark or darker than No. 2 on the Ringelmann Chart or of such opacity as to obscure an observer's view to an equivalent or greater degree, ~~provided that the operator utilizes kerosene, smoke suppressing fuel additives and synthetic lubricating oil, and the requirements of Section 6-1-503 are satisfied.~~

(Adopted July 11, 1990)

6-1-307 Prohibition of Visible Emissions Within and From a Regulated Bulk Material Site:

307.1 Effective July 1, 2019, the owner/operator of a Regulated Bulk Material Site shall not cause or allow a fugitive dust visible emission from: active operations at the site, a bulk material stockpile, or a bulk material spill that:

a. Exceeds (i) 5 feet long, 5 feet wide, or 5 feet high, and (ii) 10 percent opacity as determined by EPA Method 203B (or half as dark in shade as that designated as Number 1 on the Ringelmann Chart), for a period or aggregate periods of more than 3 minutes in any 60-minute period; or

b. Travels or carries beyond the site property line.

307.2 Effective July 1, 2019, the owner/operator of a Regulated Bulk Material Site shall clean up any bulk material spill of more than 12 inches high or more than 25 square feet by the end of the workday, unless the spill is adequately wetted, covered, or is protected by a wind screen with no more than 50 percent porosity that is (i) equal to or higher than the height of the spill; and (ii) placed upwind of the spill at a distance no greater than the height of the wind screen. Cleanup activities shall not cause fugitive dust visible emissions that exceed 20 percent opacity as determined by EPA Method 203B (or as dark in shade as that designated as Number 1 on the Ringelmann Chart), for a period or aggregate periods of more than 3 minutes in any 60-minute period.

6-1-310 ~~Particulate Weight Limitation~~Total Suspended Particulate (TSP) Concentration Limits:

310.1 ~~A~~ No person shall ~~not~~ emit TSP from any source ~~matter~~ in excess of 343 mg per dscm (0.15 gr per dscf) of exhaust gas volume.

310.2 Effective July 1, 2020, Table 6-1-310.2 emission limits shall apply to any source with a Potential To Emit TSP (as defined in Regulation 2-1-217) greater than 1,000 kg per year. No applicable source shall emit TSP at a concentration in excess of the limit indicated for the source's Exhaust Gas Rate in Table 6-1-310.2:

Table 6-1-310.2: Exhaust Gas Rate vs. Allowable TSP Concentrations

Exhaust Gas Rate		TSP Concentration Limit	
dscm/min	dscf/min	mg/dscm	gr/dscf
50 or less	1,766 or less	343	0.150
>50 – 75	>1,766 - 2,649	298	0.130
>75 – 100	>2,649 - 3,531	268	0.117
>100 – 150	>3,531 - 5,297	230	0.101
>150 – 200	>5,297 - 7,063	207	0.0903
>200 – 300	>7,063 - 10,594	178	0.0776

>300 – 400	>10,594 - 14,126	159	0.0697
>400 – 500	>14,126 - 17,657	147	0.0641
>500 – 750	>17,657 - 26,486	126	0.0551
>750 - 1,000	>26,486 - 35,315	113	0.0495
>1,000 - 1,500	>35,315 - 52,972	97.3	0.0425
>1,500 - 2,000	>52,972 - 70,629	87.3	0.0382
>2,000 - 3,000	>70,629 - 105,944	75.1	0.0328
>3,000 - 4,000	>105,944 - 141,259	67.4	0.0295
>4,000 - 5,000	>141,259 - 176,573	62.0	0.0271
>5,000 - 7,500	>176,573 - 264,860	53.3	0.0233
>7,500 - 10,000	>264,860 - 353,147	47.8	0.0209
>10,000 - 15,000	>353,147 - 529,720	41.1	0.0180
>15,000 - 20,000	>529,720 - 706,293	36.9	0.0161
>20,000 - 30,000	>706,293 - 1,059,440	31.7	0.0139
>30,000 - 40,000	>1,059,440 - 1,412,587	28.5	0.0124
>40,000 - 50,000	>1,412,587 - 1,765,733	26.2	0.0115
>50,000 - 70,000	>1,765,733 - 2,472,027	23.1	0.0101
>70,000	>2,472,027	23.0	0.0100

~~310.1 Incineration or Salvage Operations. For the purposes of 6-1-310, the actual measured concentration of particulate matter in the exhaust gas from any incineration operation or salvage operation shall be corrected to the concentration which the same quantity of particulate matter would constitute in the exhaust gas minus water vapor corrected to standard conditions, containing 12% CO2 by volume, and as if no auxiliary fuel had been used.~~

~~310.2 Gas-fired Pathological Waste Incinerators. The particulate emissions from gas-fired pathological waste incinerators, where emissions are not mingled with emissions from incineration of general wastes, shall be corrected as specified in Section 6-1-310.1 except that correction for auxiliary fuel shall not be required.~~

~~310.3 Heat Transfer Operation. For the purposes of 6-1-310, the actual measured concentration of particulate matter in the exhaust from any heat transfer operation shall be corrected to the concentration which the same quantity of particulate matter would constitute in the exhaust gas minus water vapor, corrected to standard conditions, containing 6% oxygen by volume.~~

310.3 For the purposes of Section 6-1-310, the measured concentration of TSP in the exhaust shall be corrected to standard conditions (as defined in Regulation 1-228) and (i) 12 percent carbon dioxide (CO_2) by volume, minus water vapor, for incineration or salvage operations and gas-fired pathological waste incinerators; or (ii) 6 percent oxygen (O_2) by volume, minus water vapor, for heat transfer operations. In the case of an incineration or salvage operation, the concentration shall be corrected as if no auxiliary fuel had been used and any CO_2 produced from combustion of liquid or gaseous fuel shall be excluded from the correction to 12 percent CO_2.

6-1-311 ~~General Operations~~Total Suspended Particulate (TSP) Weight Limits: ~~In addition to the limitation of Section 6-1-310, a~~

311.1 No person shall emit TSP ~~not discharge into the atmosphere~~ from any source ~~general operation particulate matter from any emission point,~~ at a rate in excess of the limit indicated for the source's Process Weight Rate~~specified~~ in

Table ~~1~~6-1-311.1 ~~for the process weight rate indicated~~. This section shall not apply to gas-, liquid- or solid-fuel ~~-~~fired indirect heat exchangers.

~~TABLE 1~~
~~ALLOWABLE RATE OF EMISSIONS BASED ON PROCESS WEIGHT RATE~~

~~Process wt rate = P~~		~~Emission = E~~	
~~kg/hour~~	~~lbs/hour~~	~~kg/hour~~	~~lbs/hour~~
~~250~~	~~550~~	~~0.8~~	~~1.8~~
~~300~~	~~660~~	~~0.9~~	~~2.0~~
~~400~~	~~880~~	~~1.1~~	~~2.4~~
~~500~~	~~1100~~	~~1.3~~	~~2.9~~
~~1000~~	~~2205~~	~~2.1~~	~~4.6~~
~~2000~~	~~4410~~	~~3.3~~	~~7.3~~
~~3000~~	~~6615~~	~~4.3~~	~~9.5~~
~~4000~~	~~8820~~	~~5.2~~	~~11.~~
~~5000~~	~~1102~~	~~6.0~~	~~13.~~
~~10000~~	~~2204~~	~~9.6~~	~~21.~~
~~20000~~	~~4409~~	~~15.~~	~~33.~~
~~over 26000~~	~~5732~~	~~18.~~	~~40.~~

~~(Interpolation formula deleted May 21, 1980. See page 6-1-5 for formulae.)~~
~~Interpolation in kg/hr~~
~~E in kg/hr = 0.02 P0.67 in kg/hr~~
~~The interpolation of the data in this Table shall be accomplished by the use of the equation E = 0.02 P0.67, where E = rate of emission in kg/hour, not to exceed 18.1 kg/hour and P = process weight rate in kg/hour.~~
~~Interpolation in lbs/hr~~
~~E in lbs/hr = 4.10 P0.67 in lbs/hr (with P in lbs/hr)~~

Table 6-1-311.1: Process Weight Rate vs. Allowable TSP Emission Limits

Process Weight Rate		TSP Emission Limit	
kg/hour	lb/hour	kg/hour	lb/hour
250 or less	551 or less	0.81	1.78
>250 - 300	>551 - 661	0.91	2.02
>300 - 400	>661 - 882	1.11	2.45
>400 -500	>882 - 1,102	1.29	2.84
>500 - 600	>1,102 - 1,323	1.45	3.21
>600 - 700	>1,323 - 1,543	1.61	3.56
>700 – 800	>1,323 – 1,764	1.76	3.89
>800 – 900	>1,764 – 1,984	1.91	4.21
>900 – 1,000	>1,984 – 2,205	2.05	4.52
>1,000 - 1,200	>2,205 – 2,646	2.31	5.11
>1,200 - 1,400	2,646 – 3,086	2.56	5.66
>1,400 - 1,600	3,086 – 3,257	2.80	6.19

>1,600 - 1,800	3,257 – 3,968	3.03	6.70
>1,800 – 2,000	>3,968 – 4,409	3.26	7.19
>2,000 – 2,500	>4,409 – 5,512	3.78	8.35
>2,500 –3,000	>5,512 – 6,614	4.27	9.43
>3,000 – 3,500	>6,614 – 7,716	4.74	10.5
>3,500 – 4,000	>7,716 – 8,818	5.18	11.4
>4,000 - 4,500	>8,818 – 9,921	5.61	12.4
>4,500 - 5,000	>9,921 - 11,023	6.02	13.3
>5,000 – 6,000	>11,023 - 13,228	6.80	15.0
>6,000 - 7,000	>13,228 - 15,432	7.54	16.6
>7,000 -8,000	>15,432 – 17,637	8.24	18.2
>8,000 – 9,000	>17,637 – 19,842	8.92	19.7
>9,000 - 10,000	>19,842 – 22,046	9.57	21.1
>10,000 – 12,000	>22,046 - 26,455	10.8	23.9
>12,000 - 14,000	>26,455 - 30,865	12.0	26.5
>14,000 - 16,000	>30,865 - 35,274	13.1	29.0
>16,000 - 18,000	>35,274 – 39,683	14.2	31.3
>18000 - 20,000	>39,683 - 44,092	15.2	33.6
>20,000 - 22,000	>44,092 – 48,502	16.2	35.9
>22,000 - 24,000	>48,502 – 52,911	17.2	38.0
>24,000 - 25,000	>52,911 – 55,116	17.7	39.1
>25,000	>55,116	18.1	40.0

311.2 Effective July 1, 2020, Table 6-1-311.2 emission limits shall apply to any source with a Potential To Emit TSP (as defined in Regulation 2-1-217) greater than 1,000 kg per year. No applicable source shall emit TSP at a rate in excess of the limit indicated for the source's Process Weight Rate in Table 6-1-311.2:

Table 6-1-311.2: Process Weight Rate vs. Allowable TSP Emission Limits

Process Weight Rate		**TSP Emission Limit**	
kg/hour	**lb/hour**	**kg/hour**	**lb/hour**
100 or less	220 or less	0.45	0.99
>100 - 150	>220 - 331	0.59	1.29
>150 - 200	>331 - 441	0.70	1.55
>200 - 300	>441 - 661	0.90	1.98
>300 - 400	>661 - 882	1.06	2.34
>400 -500	>882 - 1,102	1.21	2.67
>500 - 750	>1,102 - 1,653	1.52	3.34
>750 – 1,000	>1,653 - 2,205	1.78	3.92
>1,000 – 1,500	>2,205 - 3,307	2.21	4.86
>1,500 - 2,000	>3,307 - 4,409	2.56	5.65
>2,000 - 3,000	>4,409 - 6,614	3.15	6.95
>3,000 - 4,000	>6,614 - 8,818	3.64	8.02
>4,000 - 5,000	>8,818 - 11,023	4.06	8.95
>5,000 - 7,500	>11,023 - 16,535	4.96	10.9

>7,500 - 10,000	>16,535 - 22,046	5.44	12.0
>10,000 - 15,000	>22,046 - 33,069	6.00	13.2
>15000 - 20,000	>33,069 - 44,092	6.40	14.1
>20,000 - 30,000	>44,092 - 66,139	7.04	15.5
>30,000 - 40,000	>66,139 - 88,185	7.53	16.6
>40,000 - 50,000	>88,185 - 110,231	7.93	17.5
>50,000 - 75,000	>110,231 - 165,347	8.71	19.2
>75,000 - 100,000	>165,347 - 220,462	9.33	20.6
>100,000 - 150,000	>220,462 - 330,693	10.3	22.6
>150,000 - 200,000	>330,693 - 440,925	11.0	24.2
>200,000 - 300,000	>440,925 - 661,387	12.1	26.6
>300,000 - 400,000	>661,387 - 881,849	12.9	28.5
>400,000	>881,849	13.6	30.0

6-1-320 **Sulfuric Acid Manufacturing Plants:** ~~-~~A person shall not emit from any operation manufacturing sulfuric acid using as a principal raw material any sulfur-containing material, any emission having a concentration of SO_3 or H_2SO_4, or both,~~ expressed~~ converted to and quantified as 100% H_2SO_4, exceeding 92 mg per dscm (0.04 gr/dscf) of exhaust gas volume.

6-1-330 **Sulfur Recovery Units:** ~~-~~A person shall not emit from any operation manufacturing sulfur, using as a principal raw material any sulfur-containing material, any emission having a concentration of SO_3 or $H_2SO~~0~~_4$, or both,~~ expressed~~ converted to and quantified as 100% $H_2SO~~0~~_4$, exceeding 183 mg per dscm (0.08 gr/dscf) of exhaust gas volume.

6-1-400 **ADMINISTRATIVE REQUIREMENTS**

6-1-401 **Appearance of Emissions:** Persons subject to this Rule are subject to and shall comply with the requirements of Regulation 6-102.~~Every person responsible for an emission (except from gas fired heat transfer operations regulated by Sections 6-1-301, 6-1-303 and 6-1-304) shall have and maintain means whereby the operator of the plant shall be able to know the appearance of the emission at all times.~~

6-1-402 **Alternate Source Test Frequency:** The APCO may authorize a person to reduce the frequency of source tests required in Section 6-1-504 or 505 if at least three (3) consecutive prior source test results indicate compliance with the applicable standard. To apply for such authorization, a person subject to Section 6-1-504 or 505 must submit a request in writing to the Director of Compliance and Enforcement and Manager of Source Test indicating (i) the name of the person requesting the reduction, (ii) the site number of the site for which the reduction is sought, (iii) the source number of the source for which the reduction is sought, (iv) the pollutant for which the reduction is sought; and (iv) the results of prior source tests demonstrating compliance with the regulatory standard involved. The APCO shall approve or deny the reduction in frequency of source tests under this provision within 180 days of receipt of the written request.

6-1-500 **MONITORING AND RECORDS**

6-1-501 **Sampling Facilities and Instruments Required:** ~~-~~As described in Regulation 6-501, persons subject to this Rule are subject to, and shall provide sampling facilities and install instruments as required by, the provisions of Regulation 1.~~Persons subject to~~

~~this regulation shall provide sampling facilities and install instruments as required pursuant to the provisions of Sections 1-501, 1-520 and 1-521 of Regulation 1.~~

6-1-502 **Data, Records and Reporting:** As described in Regulation 6-502, p~~P~~ersons monitoring emissions in accordance with the requirements of ~~Sections 1-520 and 1-521 of~~ Regulation 1 shall keep records, report emission excesses and provide summaries of data collected as required by Regulation 1.

6-1-503 **Records:** ~~-~~In order to be eligible for the Ringelmann No. 2 limitation set forth in Section 6-1-306.2, the ~~A~~ person responsible for the operation of a ~~diesel~~ pile-driving hammer ~~who chooses to comply with subsection 6-1-306.2 shall~~ must maintain and have available for inspection records ~~which~~ that establish the use of kerosene, smoke suppressing fuel additives and synthetic lubricating oil.

(Adopted July 11, 1990)

6-1-504 **Demonstration of Total Suspended Particles (TSP) Compliance:** Effective July 1, 2019, the owner/operator of a source with a District permit to operate and with a Potential To Emit TSP (as defined in Regulation 2-1-217) of greater than 2,000 kg per year shall conduct source testing to demonstrate compliance with Section 6-1-310 and 311 according to the testing frequencies listed in Table 6-1-504, unless the owner/operator receives written approval from the APCO for a different testing frequency, as described in Section 6-1-402. Inactive permitted sources are not required to conduct compliance source testing until they become active by operating more than 90 days in a calendar year, and must conduct a source test within six months of becoming active. Source tests required under this section shall be conducted in accordance with Section 6-1-602.1.

Table 6-1-504: Required Compliance Test Frequencies

Potential to Emit TSP (kg/year)	Compliance Test Frequency	Min. Time Between Tests	Max. Time Between Tests
> 16,000	Annually	9 months	15 months
> 8,000 – 16,000	Biennially	18 months	30 months
> 2,000 – 8,000	Every five years	48 months	72 months

6-1-505 **Demonstration of SO_3 and H_2SO_4 Compliance:** Effective July 1, 2019, the owner/operator of a source with a District permit to operate and with a Potential To Emit SO_3 and H_2SO_4 (as defined in Regulation 2-1-217), converted to and quantified as 100 percent H_2SO_4, greater than 2,000 kg per year shall conduct source testing to demonstrate compliance with Section 6-1-320 or 330 according to the testing frequencies listed in Table 6-1-505, unless the owner/operator receives written approval from the APCO for a different testing frequency, as described in Section 6-1-402. Inactive permitted sources are not required to conduct compliance source testing until they become active by operating more than 90 days in a calendar year, and must conduct a source test within six months of becoming active. Source tests required under this section shall be conducted in accordance with Section 6-1-602.2.

Table 6-1-505: Required Compliance Test Frequencies

Potential to Emit SO_3 and H_2SO_4 (kg/year)	Compliance Test Frequency	Min. Time Between Tests	Max. Time Between Tests
> 16,000	Annually	9 months	15 months
> 8,000 – 16,000	Biennially	18 months	30 months
> 2,000 – 8,000	Every five years	48 months	72 months

6-1-506 Monitoring and Recordkeeping at Regulated Bulk Material Sites: The owner/operator of any Regulated Bulk Material Site shall monitor sources and operations at the site subject to the requirements in Section 6-1-307 as follows:

506.1 Monitor the nature and extent of any fugitive dust visible emissions from each source or operation, using simple observation of the source or operation with the sun or light positioned behind the observer, at times when the potential for fugitive dust visible emissions is at its highest due to wind conditions and/or work activities, or as otherwise specified by the APCO, according to the following frequencies:

a. For any source or operation with the potential to generate fugitive dust located within 1000 feet of the site property line on a workday when the wind is blowing from the source toward the property line, at least twice during each such workday;

b. For all sources and operations with the potential to generate fugitive dust, at least once during each workday.

c. Monitoring of petroleum coke, calcined coke, or coal operations are required during daylight hours only.

506.2 Document the sources and operations monitored each workday when active material handling and storage operations occur.

506.3 Maintain records required by Section 6-1-506.2 for two years, in electronic, paper hard copy or log book format, and make these records available to the APCO upon request.

6-1-600 MANUAL OF PROCEDURES

6-1-601 Applicability of Test Methods: The common test methods cited in Regulation 6 shall apply to this Rule, including the methods cited in Regulation 6-601: Assessment of Visible Emissions, and Regulation 6-602: Assessment of Opacity.

~~**6-1-601 Particulate Matter, Sampling, Sampling Facilities, Opacity Instruments and Appraisal of Visible Emissions:** The procedures and specifications for testing and evaluating emissions required by The MOP contains the testing temperature for the determination of the presence of particulate matter, procedures relating to the siting of sampling facilities, source test procedures, opacity instrument specifications, calibration and maintenance requirements, and the procedure for appraising visible emissions.~~

6-1-602 Methods for Determining Compliance: Compliance testing required by Sections 6-1-504 and 505 shall be based on the following test methods:

602.1 Total Suspended Particulate: Source tests to determine compliance with TSP emissions limits shall be conducted in accordance with EPA Method 5, or an alternate method as described in Regulation 6-603. Source tests are not required if sources cannot be modified to comply with source test requirements and testing is not physically possible (e.g., for sources without a defined stack).

602.2 SO_3 and Sulfuric Acid Mist: Source tests to determine compliance with SO_3 and H_2SO_4 emission limits shall be conducted in accordance with EPA Method

8 or an EPA and APCO approved alternative. Source tests are not required if sources cannot be modified to comply with source test requirements and testing is not physically possible (e.g., for sources without a defined stack).

REGULATION 6
PARTICULATE MATTER
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REGULATION 6
PARTICULATE MATTER
RULE 6
PROHIBITION OF TRACKOUT

Effective July 1, 2019

6-6-100 GENERAL

6-6-101 Description: The purpose of this Rule is to limit the quantity of particulate matter in the atmosphere through control of trackout of solid materials onto paved public roads outside the boundaries of Large Bulk Material Sites, Large Construction Sites, and Large Disturbed Surface sites including landfills. This Rule does not apply to Bulk Material Sites, Construction Sites and Disturbed Surface Sites less than 1 acre.

6-6-102 Applicability of General Provisions: The general provisions in Regulation 1 and Regulation 6 shall apply to this rule.

6-6-110 Exemptions for Activities Subject to Other Rules and Regulations:

110.1 Metal Recycling and Shredding Operations: The provisions of this rule shall not apply to facilities subject to the provisions of Regulation 6, Rule 4.

110.2 Portland Cement Manufacturing: The provisions of this rule shall not apply to facilities subject to the provisions of Regulation 9, Rule 13.

6-6-200 DEFINITIONS

6-6-201 Active Operations: As defined in Regulation 6-201, any activity with the potential to create particulate emissions from any source or fugitive dust emissions. With regard to this rule, any activity with the potential to create trackout that when dry could create fugitive dust emissions.

6-6-202 Applicability of Common Definitions: The common definitions in Regulation 1 and Regulation 6 shall apply to this rule.

6-6-203 Bulk Material: As defined in Regulation 6-201, any unpackaged sand, soil, gravel, aggregate, solid construction material, solid industrial chemical or other unpackaged solids less than 2 inches in length or diameter.

6-6-204 Bulk Material Site: As defined in Regulation 6-202, any site with one or more stockpiles of bulk material greater than 5 feet high or with a footprint greater than 100 square feet.

6-6-205 Construction Site: Any site at which one or more buildings, structures or other improvements are being constructed, maintained, altered, remodeled, expanded or demolished. For purposes of this definition, Construction Site includes all contiguous and adjacent areas where any activities related to the construction, maintenance, alteration, remodeling, expansion or demolition occur, including any preparatory or ancillary activities including but not limited to land clearing and grubbing, ground breaking, excavation, land leveling, grading, cutting and backfilling, planing, shaping, drilling, trenching and landscaping.

6-6-206 Disturbed Surface Site: Any site at which land has been physically moved, uncovered, destabilized or otherwise modified from its undisturbed natural soil conditions, thereby making the surface subject to wind erosion, vehicle traffic, or mechanical activities that have the potential to create trackout or generate fugitive dust.

6-6-207 Large Bulk Material Site: Any Bulk Material Site where the total land area covered by bulk material handling operations and disturbed surfaces is greater than 1 acre.

6-6-208 Large Construction Site: Any Construction Site where the total land area covered by construction activities, bulk material handling operations and disturbed surfaces is greater than 1 acre.

6-6-209 Large Disturbed Surface Site: Any Disturbed Surface Site where the total land area of disturbed surface is greater than 1 acre.

6-6-210 Trackout: Any sand, soil, dirt, bulk material or other solid particles from a site that adhere to or agglomerate on the exterior surfaces of vehicles (including tires), and subsequently fall or are dislodged onto a paved public roadway or the paved shoulder of a paved public roadway on the path that vehicles follow at any exit and extending

50 feet out onto the paved public roadway beyond the boundary of the site. Material that has collected on the roadway from erosion is not trackout.

6-6-211 **Workday:** As defined in Regulation 6-209, any period, typically 8 – 12 hour shifts, when active operations occur on the site.

6-6-300 STANDARDS

6-6-301 **Prohibition of Trackout onto Paved Roadways:** The owner/operator of any Large Bulk Material Site, Large Construction Site, or Large Disturbed Surface Site shall not cause or allow trackout at any active exit from such site onto an adjacent paved public roadway or shoulder of a paved public roadway that exceeds cumulative 25 linear feet and creates fugitive dust visible emissions without cleaning up such trackout within 4 hours of when the owner/operator identifies such excessive trackout; and shall not cause or allow more than 1 quart of trackout to remain on the adjacent paved public roadway or the paved shoulder of the paved public roadway at the end of any workday.

6-6-302 **Prohibition of Visible Emissions During Cleanup of Trackout:** The owner/operator of any Large Bulk Material Site, Large Construction Site, or Large Disturbed Surface Site shall not cause or allow a fugitive dust visible emission during cleanup of any trackout that exceeds 20 percent opacity as determined by EPA Method 203B (or as dark in shade as that designated as Number 1 on the Ringelmann Chart), for a period or aggregate periods of more than 3 minutes in any 60-minute period.

6-6-400 ADMINISTRATIVE REQUIREMENTS

6-6-500 MONITORING AND RECORDS

6-6-501 **Monitoring and Recordkeeping:** The owner/operator of any Large Bulk Material Site, Large Construction Site, or Large Disturbed Surface Site that produces trackout shall:

501.1 Monitor the extent of the trackout at each active exit from the site onto a paved public road at least twice during each workday, at times when vehicle traffic exiting the site is most likely to create an accumulation of trackout, or as otherwise specified by the APCO;

501.2 Document the active exit locations monitored each workday;

501.3 Document each occasion when the trackout exceeds cumulative 25 linear feet and all trackout control and cleanup actions initiated as a result of monitoring per Section 6-6-501.1; and

501.4 Maintain the records required by Sections 6-6-501.2 and 501.3 for two years, in electronic, paper hard copy or log book format, and make them available to the APCO upon request.

6-6-600 MANUAL OF PROCEDURES

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

STAFF REPORT – PARTICULATE MATTER

Proposed New Regulation 6: Common Definitions and Test Methods

Guy A. Gimlen
Principal Air Quality Engineer
June 2018

ACKNOWLEDGEMENTS

District staff members who contributed significantly to the development of this report and proposal:

Alexander Crockett, Esq., Assistant Counsel, Legal
Wayne Kino, Deputy Air Pollution Control Officer
Don VanBuren, Senior Air Quality Engineer, Compliance & Enforcement
Ed Giacometti, Air Program Supervisor, Compliance & Enforcement
Jeff Gove, Director, Compliance & Enforcement
Paul Hibser, Air Program Supervisor, Compliance & Enforcement
Ron Carey, Senior Inspector, Compliance & Enforcement
Greg Solomon, Supervisor, Engineering
Brian Lusher, Senior Air Quality Engineer, Engineering
Jerry Bovee, Manager, Meteorology and Measurement
Chuck McClure, Air Program Supervisor, Meteorology and Measurement
Tim Underwood, Principal Air Quality Engineer, Meteorology and Measurement
Brad Kino, Senior Air Quality Engineer, Meteorology and Measurement
Luz Gomez, Manager, Communications
David Ralston, Manager, Communications
Azibuike Abaka, Public Information Officer II, Community Engagement
Kristen Law, Staff Specialist I, Communications
Rosene Salmo, Staff Specialist I, Communications
Aneesh Rana, Air Quality Technician II, Communications

STAFF REPORT

Regulation 6: Common Definitions and Source Test Methods

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I. EXECUTIVE SUMMARY

The Bay Area Air Quality Management District (Air District) is proposing a new over-arching regulation for Particulate Matter, Regulation 6: Common Definitions and Test Methods (Reg 6) to accompany proposed amendments to Regulation 6, Rule 1: General Requirements, the Air District's general particulate matter emissions limitation rule. The new Regulation 6 is proposed to provide common definitions and test methods that apply to existing Regulation 6 rules and any other source-specific rules as they are developed in the future. This Staff Report provides background information on new Regulation 6 and a summary of the rationale for updating Regulation 6, Rule 1 (Rule 6-1). Background research on Bay Area particulate matter emissions is provided in Attachment 1. A separate Staff Report has been developed to provide the specific information supporting the proposed amendments to Rule 6-1. The two proposed rules and two staff reports are intended to provide the public with information on both the new Regulation 6 and draft amendments to Rule 6-1 in advance of Public Hearing the Air District will hold in Spring 2018.

The proposed amendments to Rule 6-1 address a commitment by the Air District's Board of Directors to review Regulation 6, Rule 1: General Requirements, identified as control measure SS31 in the Air District's 2017 Clean Air Plan. Prior to the 2017 Clean Air Plan, Air District staff developed a focused study to address the Bay Area's particulate matter challenges in a November 2012 report entitled *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area*. These proposed amendments to Regulation 6, Rule 1 are the first of many steps needed to reduce particulate matter emissions and improve public health.

Background research and analysis were done during the development of proposed amendments to Rule 6-1, and are intended to provide the foundation for the Air District's efforts to reduce public exposure to unhealthy levels of particulate matter. Particulate matter, also called PM or soot, are extremely small particles that cause or contribute to a wide variety of serious health problems, including asthma, bronchitis, cardio-vascular diseases, and cancer. The Air District has committed to reduce particulate matter levels to achieve significant health benefits. Staff expects that additional, source-specific rulemaking will build upon this foundation.

Staff is proposing a new Regulation 6: Common Definitions and Test Methods to provide definitions and test methods that apply to all Regulation 6, Particulate Matter rules. Proposed new Reg 6 includes the following:

- An expectation that all operators of facilities subject to Regulation 6 Rules will monitor their operations sufficiently to enable them to prevent violations, and take corrective actions as needed to ensure compliance.
- Common definitions that apply to all particulate matter rules. This approach standardizes the definitions and provides a single reference location for these definitions. Definitions can be compromised when located in several source specific rules, where version control is difficult.
- Source test methods that apply to all or most individual particulate matter rules. Similarly, this approach standardizes test methods and provides a single reference location for these test methods.

Staff proposes proposed amendments to Rule 6-1 because its particulate standards have not been updated in decades; other air districts in California have more stringent standards, and amendments are needed to ensure the Bay Area standards are equally health-protective. Control technology is available that facilities can use to comply at a reasonable cost; and the revised standards may lead to $PM_{2.5}$ reductions that will help the Air District achieve its health-based $PM_{2.5}$ goals.

Staff identified three additional opportunities to reduce particulate emissions:

- Bulk material storage and handling is subject to wind erosion, and can create particulate emissions from handling solids and from vehicle traffic in and around bulk material sites.
- Trackout of mud and dirt onto paved roadways, where the dirt gets pulverized into silt, and entrained in the air by passing vehicles.
- Asphalt operations, where hot asphalt vapors create odors and smoke. The smoke is vaporized asphalt that condenses to form particles in the air.

Requirements for bulk material storage and handling facilities have been included in amendments to Rule 6-1. A new Regulation 6, Rule 6: Prohibition of Trackout (Rule 6-6) is being proposed to prohibit trackout of dirt and other solids onto adjacent public roadways. The third opportunity – a draft new Regulation 6, Rule 7: Roofing Asphalt, was developed to control roofing asphalt fumes that are both odorous and condense to form tiny particles in the air. Costs determined during the workshop phase of the rule development process were found to be prohibitive, and further development of this draft rule has been halted until additional options can be identified.

A separate Staff Report has been developed for draft new Rule 6-6 to provide supporting information. The proposed rule and staff report are intended to provide the public with information in advance of a Public Hearing the Air District will hold in early 2018. Proposed new Rule 6-6 will be considered with proposed new Regulation 6, and amendments to Rule 6-1 at the same Public Hearing.

Staff recommends the Board of Directors adopt proposed new Regulation 6, proposed amendments to Regulation 6, Rule 1, and approve the associated CEQA Analysis Negative Declaration at the Public Hearing scheduled for Spring 2018.

The Air District invites all interested members of the public to review the proposed new Regulation 6, proposed amendments to Rule 6-1 and this Staff Report, to provide comments on this proposal, and to participate in the Public Hearing. Air District staff will accept written comments, will respond to all comments received and will present final proposals to the Air District's Board of Directors for their consideration. For further information in advance of the Public Hearing, please contact Guy Gimlen, Principal Air Quality Engineer, (415) 749-4734, ggimlen@baaqmd.gov.

II. BACKGROUND

A. Characterization of Particulate Matter

This section provides background information regarding airborne particulate matter (PM) and associated concerns with public health. The following discussion summarizes and applies information provided in four Air District source documents:

- Health Impact Analysis of Fine Particulate Matter in the San Francisco Bay Area, published in September 2011,
- Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area, published in November 2012, and
- Sources of Bay Area Fine Particles: 2010 Update and Trends, published in December 2012.
- Bay Area 2017 Clean Air Plan, published in April 2017 (see Chapter 2).

1. Introduction to Particulate Matter

PM encompasses a diverse assortment of tiny airborne particles of different sizes, physical states, chemical compositions, and toxicity. Individual particles can vary in terms of their behavior in the atmosphere and the length of time they remain suspended in the air. PM can originate from a variety of anthropogenic stationary and mobile sources, as well as from natural sources. Typically, PM consists of a mixture of microscopic solid particles and minute liquid droplets known as aerosols that condense at atmospheric temperatures. PM can be emitted directly to the atmosphere (referred to as direct PM or primary PM), or formed in the atmosphere through reactions between other pollutants (referred to as indirect or secondary PM). Primary PM includes soot and liquid aerosols from a wide variety of sources, including cars, trucks, buses, industrial facilities, power plants, cooking, and burning wood. Primary PM also includes dust from construction sites, tilled fields, paved and unpaved roads, landfills, and rock quarries. Secondary PM may be formed when various pollutants from burning fuels such as sulfur oxides (SOx) and nitrogen oxides (NOx) react with volatile organic compounds (VOC) and ammonia in the presence of sunlight and water vapor. PM includes carbon and various metallic elements; compounds such as nitrates, organics, and sulfates; and complex mixtures such as diesel exhaust, wood smoke, and soil. Dust from roads, quarries and construction sites are generally larger, coarser particles, whereas combustion soot and secondary PM tend to be very fine particles. Unlike the other criteria pollutants, which are individual chemical compounds, particulate matter consists of all particles suspended in the air.

PM is often characterized based on particle size using the following terminology:

- **Total Suspended Particulate (TSP)**: Includes all sizes of airborne particles.
- **PM_{10}**: Is the fraction of the total particles in the atmosphere that are 10 microns or smaller in diameter (one micron or micrometer equals one-millionth [10^{-6}] of a meter). This includes $PM_{2.5}$ (described next).
- **$PM_{2.5}$**: Is the fraction of total particles that are 2.5 microns or smaller in diameter, and is sometimes referred to as “fine” PM. This includes ultrafine PM (described next).
- **Ultrafine PM**: Consists of particles smaller than 0.1 micron in diameter.

Larger particles weigh the most, so large particles represent the largest fraction in terms of weight, whereas the smaller particles are more numerous and have more surface area in aggregate but usually contribute less toward the total mass of PM_{10}. Ultrafine PM is estimated to account for roughly 90 percent of the total number of particles but usually represent much lower percentage of the mass.

When the 1970 federal Clean Air Act was adopted, regulatory efforts to address PM focused primarily on Total Suspended Particulate (TSP), the generic name for all airborne particles of any

size. Regulation 6, Particulate Matter; Rule 1: General Requirements was developed at that time. Subsequently, scientific evidence pointed to smaller particles as posing the most serious health consequences. Therefore, in 1987, EPA replaced its TSP clean air standard with a PM_{10} clean air standard – one that regulated particles less than 10 microns in diameter. In 1997, EPA augmented its PM_{10} standard with a $PM_{2.5}$ clean air standard focused on particles less than 2.5 microns in diameter.

2. Bay Area PM Emissions and PM Formation

PM chemistry and formation are complex and variable. PM concentrations vary considerably both in composition and spatial distribution, and on a day-to-day basis as well as from season to season.

Primary PM Emissions

Direct $PM_{2.5}$ emissions in the Bay Area are produced by a wide variety of sources, both human and natural, but dominated by a few. About half of Bay Area $PM_{2.5}$ is directly emitted from combustion, i.e., burning fossil fuels, wood and other vegetative matter; or cooking. This directly emitted $PM_{2.5}$ is mostly composed of organic carbon compounds and soot containing pure carbon, as well as gases that form liquid aerosols as they cool, known as condensable PM.

Combustion of fossil fuels in all types of engines produces direct emissions of PM. In addition, motor vehicles also: i) cause re-entrainment of dust on and along the side of roads as they drive, ii) create particles known as road dust by abrading road materials such as concrete and asphalt pavement, and iii) create tiny particles from tire and brake pad wear. Combustion of fossil fuels also creates NO_x and SO_x which can react with other air pollutants to form secondary PM.

Diesel engines emit a complex mixture of air pollutants, with a major fraction consisting of $PM_{2.5}$. Diesel emissions account for roughly one-sixth of total emissions of carbonaceous $PM_{2.5}$ in the Bay Area. Because exposure to diesel PM is linked to a wide range of negative health effects, as described below, reducing emissions of diesel PM from heavy-duty engines is a priority for the California Air Resources Board (CARB) and the Air District. Diesel PM emissions from heavy-duty vehicles have already declined substantially over the past decade, and they are expected to continue decreasing significantly over the next decade in response to recent CARB Diesel Risk Reduction Program regulations and Air District regulations and other efforts.

Geological dust, which includes construction dust and windblown dust, accounts for a relatively modest fraction of $PM_{2.5}$ (five to ten percent), but a very large portion of PM_{10} (50 - 60 percent). Sea salt from the ocean contributes another ten percent on an annual basis.

Condensable PM Emissions

Condensable particulates are a subset of directly emitted, primary particulate matter. Condensable PM leaves the hot engine exhaust or industrial stack in gaseous form, and then condenses to form liquid aerosols or solid particles after mixing with cooler ambient air. The amount of condensable PM is an unknown for many industrial sources because methods to accurately quantify condensable PM have only recently been finalized.

Secondary PM Emissions

In addition to directly emitted PM, emissions of PM precursors such as sulfur dioxide (SO_2), NO_X, ammonia, and volatile hydrocarbons contribute to atmospheric chemical reactions that form secondary PM. Ammonia reacts with SO_2 to form ammonium sulfate. Combustion of fossil fuels produces NO_X, which combines with ammonia in the atmosphere to form ammonium nitrate. Volatile organic compounds can also form particles through a number of complex chemical mechanisms in the atmosphere. These secondary PM compounds constitute approximately one-

third of the Bay Area $PM_{2.5}$ on an annual basis, and approximately 40 – 45 percent of Bay Area $PM_{2.5}$ during winter peak periods. Secondary PM formation of ammonium sulfate is relatively low (averaging 1-2 $\mu g/m^3$), but it does account for approximately 10 percent of total $PM_{2.5}$ on an annual average basis.

Even though primary (direct) PM and secondary PM are defined in terms of the processes and sources that produce PM, most individual particles in the atmosphere are in fact a combination of both primary and secondary PM. An individual particle typically begins as a core or nucleus of carbonaceous material, often containing trace metals. These primary (directly emitted) particles are geologic dust or originate from incomplete combustion of fossil fuels or biomass. Layers of organic and inorganic compounds then condense or deposit onto the particle, causing it to grow in size. These layers are largely comprised of secondary material that is not emitted directly. As a particle grows larger, gravity eventually causes it to fall out and be deposited onto a surface.

Aligning Emissions with Ambient Air Monitoring Results

Determining the relative contributions of various sources of direct emissions and $PM_{2.5}$ precursors to the total is very complex. An estimate of the relative contribution from various sources is based on emissions inventory data combined with results of chemical mass balance (CMB) analysis[1] of the material gathered by the ambient air monitors. In analyzing PM sources, there may be discrepancies between the estimated PM emissions inventory and ambient PM concentrations estimated from CMB analysis. For example, the emissions inventory lists road dust, construction dust, and windblown dust as significant sources, whereas chemical mass balance analysis shows such dust to be a very small portion of $PM_{2.5}$, particularly during winter when $PM_{2.5}$ levels are at their highest. A likely explanation is that humidity is generally higher during the winter rainy season, so geologic dust is less likely to become airborne during winter. An additional influence is that fugitive dust does not necessarily stay airborne over extended distances. Larger $PM_{2.5}$ particles – i.e. those nearly 2.5 microns in diameter tend to settle out relatively quickly, whereas smaller particles – those less than one micron in diameter including combustion related $PM_{2.5}$ – can stay airborne much longer.

Seasonal Impacts

The Air District has found that $PM_{2.5}$ levels that occur on a given day are strongly influenced by the prevailing weather. Cool weather is especially conducive to the formation of ammonium nitrate. Ammonium nitrate is a significant source of secondary $PM_{2.5}$ in winter months, contributing approximately 10 – 20 percent of total $PM_{2.5}$ near the coast, and 40 – 50 percent of total $PM_{2.5}$ inland. This semi-volatile $PM_{2.5}$ component is stable in solid form only during the cool winter months.

The relationship between the weather and $PM_{2.5}$ levels has been analyzed using a statistical technique known as cluster analysis to find groups of days exhibiting similar conditions. Cluster analysis was applied to ten years of measurements to determine winter weather patterns associated with elevated Bay Area $PM_{2.5}$ levels. Cluster analysis found that a single weather pattern accounted for most elevated 24-hour $PM_{2.5}$ episodes in the Bay Area. $PM_{2.5}$ exceedances in the Bay Area usually occurred after two to four consecutive days of $PM_{2.5}$ buildup under a high-pressure system. High $PM_{2.5}$ episodes are typically regional in scale, affecting multiple Bay Area locations, but can also be highly localized depending on proximity of a source, meteorology and other factors. These conditions occur when a high-pressure system moves over Central California in winter months, resulting in sunny days and clear, cold nights with little wind. The lower levels

[1] Chemical mass balance (CMB) analysis is a methodology in which a computer model is used to apportion ambient $PM_{2.5}$ collected on filters over 24-hour periods at monitoring sites around the Bay Area to a set of source categories. Each filter was analyzed for a range of chemical species. The same species were measured in special studies of emissions from various sources, such as motor vehicles and wood burning. The CMB model finds the mix of these source measurements that best matches the ambient sample, chemical species by chemical species.

of sunlight in the winter lead to strong temperature inversions (phenomenon where the atmospheric temperature increases with altitude). These inversions are conducive to the buildup of PM in ambient air near ground level, especially $PM_{2.5}$ and ultrafine particles, which can remain airborne for many days.

Winter is also when the most residential wood burning occurs. The CMB analysis shows that both fossil fuels and biomass (primarily wood) combustion sources are large $PM_{2.5}$ contributors in all seasons. The biomass combustion's contribution to peak 24-hour $PM_{2.5}$ levels is about three to four times higher in winter than the other seasons, as confirmed by isotopic carbon (^{14}C) analysis, reflecting increased levels of wood burning during the winter season. In the Bay Area, wood smoke is the largest source of airborne $PM_{2.5}$ during winter elevated 24-hour PM episodes.

During winter months, the Bay Area may also be impacted by PM from the Central Valley. High-pressure systems over Central California are highly conducive to the build-up of $PM_{2.5}$ in the Central Valley. As dense cold air converges on the Central Valley floor, which increases air pressure, air flows westward through the Carquinez Strait and into the Bay Area, thereby transporting $PM_{2.5}$ from the Central Valley to the Bay Area. When $PM_{2.5}$ from the Central Valley combines with $PM_{2.5}$ emitted or formed within the Bay Area, elevated PM levels in the Bay Area can occur, especially in the eastern parts of the region closest to the Central Valley.

3. PM Health Effects

Since exposure to ambient PM has long been understood as a health hazard,[2] PM was designated as one of the criteria pollutants in the original 1970 federal Clean Air Act. Concerns about PM were initially based on its respiratory health effects, such as aggravating asthma, bronchitis, and emphysema. However, in recent years, many epidemiological studies have linked PM exposure to a much wider range of negative health effects, including cardiovascular effects such as atherosclerosis (hardening of the arteries), ischemic strokes (caused by obstruction of the blood supply to the brain), and heart attacks. Studies also indicate that exposure to PM may be related to other health effects, including reduction in cognitive function, autism, and increased risk of diabetes. Infants and children, the elderly, and persons with heart and lung disease are most sensitive to the effects of PM.

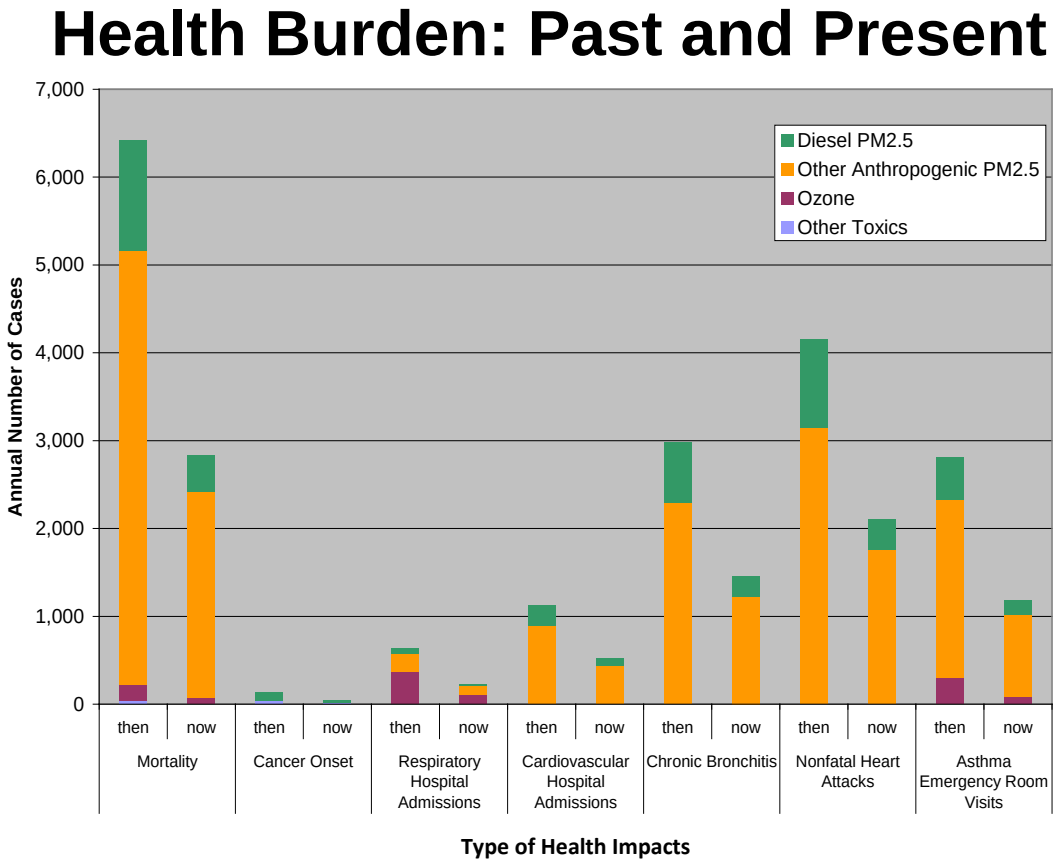
Analysis by Air District staff found that $PM_{2.5}$ is the most significant air pollution health hazard in the Bay Area, particularly in terms of premature mortality.[3] Studies have concluded that reducing PM emissions can reduce mortality and increase average life span.[4] Figure II-1 shows the assessment of air pollution impacts on key health indicators in the Bay Area related to exposure to emissions of PM, ozone and toxics. The graph presents information for "now" (based on 2008 data) compared to several decades ago (1970's for ozone, late 1980's for toxics and PM).

[2] The London fogs of the early 1950s that killed thousands of people were primarily caused by PM from coal, which led to the banning of coal burning within the city.

[3] See Appendix A in the Bay Area 2010 Clean Air Plan.

[4] For example, a recent study of nationwide scope found that reducing fine PM results in significant and measurable improvements in human health and life expectancy. Pope, C. Arden III et al. "Fine Particulate Air Pollution and Life Expectancy in the United States." New England Journal of Medicine, January 22, 2009. Volume 360:376-386. No. 4.

Figure II-1: Assessment of Bay Area Health Burden from PM & Other Air Pollutants



Although the epidemiological evidence that shows strong correlation between elevated PM levels and public health effects is very well documented, scientists are still working to understand the precise biological mechanisms through which PM damages our health. A recent study by researchers at the University of Michigan suggests that PM may harm our bodies by a combination of 1) increasing blood pressure and 2) triggering a response causing inflammation that can stiffen and damage blood vessels.[5]

The smaller the particle, the more easily it can evade the body's filtration system, penetrate deep into the lungs and enter the bloodstream. Research in recent years suggests that both $PM_{2.5}$ and "ultrafine" particles (those less than 0.1 microns) may pose the most serious threat to public health.[6] Because of their small size, $PM_{2.5}$ and ultrafine particles account for a relatively small fraction of total PM mass; however, they comprise the vast majority of particles by number. In addition, small particles have a much higher surface area per mass than larger particles; therefore, they can act as carriers for other agents such as trace metals and organic compounds that collect on their surface. Again, internal combustion engines, whether powered by gasoline, diesel, or natural gas, are a major source of $PM_{2.5}$ and ultrafine PM. Studies in Southern California have found elevated counts of ultrafine particles near freeways. Numerous studies[7] have shown increased incidence of respiratory and cardiovascular disease near heavily traveled roadways.

[5] See Robert Brook et al. "Insights into the Mechanism and Mediators of the Effects of Air Pollution Exposure on Blood Pressure and Vascular Function in Healthy Humans" Hypertension: Journal of the American Heart Association, July 29, 2009.

[6] See Chapter 11 (Ultrafine Particles) in the 2007 South Coast Air Quality Management Plan.

[7] Health Effects Institute Panel on the Health Effects of Traffic-Related Air Pollution, Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects. Health Effects Institute: Boston, 2010. Available at www.healtheffects.org.

Public health officials and regulatory agencies, including the CARB, have expressed concern about public exposure to PM from diesel engines. Diesel PM endangers public health not only as a component of $PM_{2.5}$, but also as a carcinogenic TAC. Analysis of TACs in the Bay Area for the Air District's Community Air Risk Evaluation (CARE) program identified diesel PM as the TAC responsible for the majority of cancer risk from air pollution in the Bay Area. It should be noted, however, that the mortality risk from diesel PM primarily relates to its role as a component of $PM_{2.5}$, rather than as a carcinogenic TAC.

Significant progress has been made to enhance our technical understanding of PM, including improved monitoring and enhanced modeling capabilities. However, because the shift in focus toward PM is relatively recent, efforts to analyze and control PM still lag pollutants such as ozone, ozone precursors, and carbon monoxide. Research on the health impacts of $PM_{2.5}$ and ultrafine particles is still evolving, and no ambient air quality standards for ultrafine PM have yet been established. Existing state and national ambient PM standards are based on mass (weight) concentrations in the air, rather than the number of airborne particles.

A study of particle suspension in the air has shown that larger particles (larger than PM_{10}) fall back to the earth quickly (typically within 100 - 200 feet), and smaller particles ($PM_{2.5}$) tend to dissipate in the surrounding air. Measurements of diesel and other ultrafine PM from vehicles on the freeways indicate that particulates tend to reach background concentrations about 250 meters away from the freeway.[8, 9]

The chemical and physical properties of PM vary greatly with time, region, meteorology, and source, thus complicating the assessment of health and welfare effects. One of the challenges in devising strategies to reduce PM is that scientists are still working to determine the relative health risk associated with the many types, sources and sizes of particles that comprise PM. Better information in this regard will help prioritize our efforts to achieve the greatest benefit in reducing health risks associated with PM. Nevertheless, our best knowledge to date suggests that fine particles themselves are harmful, irrespective of composition, and reduction of $PM_{2.5}$ concentrations result in significant health benefits.

Other Impacts of PM

PM emissions also have impacts on the climate. PM aerosols can help to reduce the full effect of global warming by scattering sunlight. Conversely, black carbon or soot, a component of PM emitted by diesel engines and by wood or biomass combustion, absorbs sunlight and thus contributes to global warming. Because airborne particles can have both cooling and heating effects, it is difficult to determine the net impact of $PM_{2.5}$ on climate. However, there is consensus that we need to decrease emissions of black carbon to protect the climate.[10]

Particulate matter, especially larger particles (TSP and PM_{10}) can constitute significant nuisances and are a source of public complaints, particularly about dust. Dust can also exacerbate a wide variety of respiratory issues. PM is a prime cause of regional haze, which is a more general quality of life issue.

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[8] Improving Air Quality and Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective and Path Forward (2004 – 2014), April 2014, page 76.

[9] Zhu, Y.F., W.C. Hinds, S. Kim, S Shen, C. Sioutas, 2002. Study of ultrafine particles near a major highway with heavy-duty diesel traffic. Atmospheric Environment, 36, 4323-4335. doi:10.1016/S1352-2310(02)00354-0.

[10] US EPA Report to Congress on Black Carbon, March 2012

4. Bay Area's Attainment Status of PM Air Quality Standards

The U.S. Environmental Protection Agency (EPA) and CARB have adopted health-based air quality standards for PM_{10} and $PM_{2.5}$. The federal standards are referred to as the National Ambient Air Quality Standards (NAAQS), and the California standards are referred to as the California Ambient Air Quality Standards (CAAQS) and are designed to protect public health. Both sets of standards are set as concentrations of particles (either 10 microns or smaller, or 2.5 microns or smaller) in the ambient air, using units of micrograms per cubic meter ($\mu g/m^3$).

Both the national and California standards are reviewed periodically to evaluate whether developments in public health and medical research suggest that the standards should be made even more stringent. To date, researchers have not been able to identify a clear threshold below which there are no adverse health effects from exposure to $PM_{2.5}$. This suggests that $PM_{2.5}$ standards may be further reduced in the future.

The EPA and CARB designate each region in the state as to whether it is "attaining" each NAAQS and CAAQS. A summary of the Bay Area's attainment status with respect to each national standard is as shown in the following table.

Table II-1: National Ambient Air Quality Standards for $PM_{2.5}$ and PM_{10}

National Air Quality Standards	Limit ($\mu g/m^3$ [a])	2015-2017 Design Value[b] ($\mu g/m^3$)	2015-2017 Design Value excluding fire-affected data[c] ($\mu g/m^3$)	Attainment Status
National 24-hour $PM_{2.5}$ standard (Three-year average of 98th percentiles)	35[d]	35	25	Non-attainment[e]
National Annual $PM_{2.5}$ standard (Three-year average)	12.0	11.0	10.3	Unclassifiable/Attainment
National 24-hour PM_{10} standard	150[f]	92	58	Unclassifiable/Attainment

[a] micrograms per cubic meter ($\mu g/m^3$)

[b] The Design Value for the 24-hour $PM_{2.5}$ standard is the highest three-year average of 98th percentile concentrations at any site. The Design Value for the 24-hour $PM_{2.5}$ standard is the highest three-year average of the annual means at any site. The PM_{10} Design Concentration is the highest maximum 24-hour concentration measured during the three-year period at any site.

[c] Data from days affected by wildfires (September 1-4 and October 9-19, 2017) are removed from these Design Value determinations.

[d] US EPA tightened the national 24-hour $PM_{2.5}$ standard from 65 to 35 $\mu g/m^3$ in 2006. The designation of the Bay Area as non-attainment for the 2006 24-hr national $PM_{2.5}$ standard became effective on December 14, 2009.

[e] On January 9, 2013, U.S. EPA issued a Clean Data Finding for the 2006 24-hour $PM_{2.5}$ National Ambient Air Quality Standard based on air monitoring data, published in the Federal Register, Vol. 78, Page 1760 (78 FR 1760). However, the Bay Area AQMD has not yet submitted a redesignation request to EPA. The

Bay Area will continue to be designated as non-attainment until the District submits a redesignation request and maintenance plan to EPA, and EPA approves the request.

[f] The national 24-hour PM_{10} standard is met if every site has no more than one expected exceedance per year averaged over three years. However, with a one-in-six day sampling frequency, a monitoring site with one exceedance during the three year period would violate the standard.

As explained in the table's note b, the U.S. EPA finalized a Clean Data Finding for the 2006 24-hour $PM_{2.5}$ standard based on air monitoring data. The air monitoring data indicator for attainment of national standards is known as the "Design Value." The Design Value for 2015 through 2017 is 35 µg/m^3. If data affected by wildfires is removed, the 2015-2017 Design Value is 25 µg/m^3. The Bay Area is designated Unclassifiable/Attainment for both the national annual $PM_{2.5}$ standardand the national 24-hour PM_{10} standard.

Table II-2 provides a summary of the Bay Area's attainment status with respect to each California standard.

Table II-2: California Ambient Air Quality Standards for $PM_{2.5}$ and PM_{10}

California Air Quality Standards	**Limit** (µg/m^3)	**2015-2017 Designation Value** [a] (µg/m^3)	**2015-2017 Designation Value excluding fire-affected data**[b] (µg/m^3)	**Current Attainment Status**
California Annual $PM_{2.5}$ standard (maximum of most recent 3 years)	12	14	12	Non-attainment
California 24-hour PM_{10} standard	50	95	58	Non-attainment
California Annual PM_{10} standard	20	22	21	Non-attainment

[a] The "Designation Value" is the highest yearly maximum or average between 2015 through 2017.

[b] Data from days affected by wildfires (September 1-4 and October 9-19, 2017) are removed from these Designation Value determinations.

The Air District is not in attainment with the California annual $PM_{2.5}$ standard of 12 µg/m^3. The air monitoring data indicator for attainment of the California standards is known as the "Designation Value" and is the maximum concentration measured at any site in the area during a three year period. For 2015 – 2017, the Designation Value for the Bay Area is 14 µg/m^3, measured at the Napa site in 2017. If data affected by major wildfires is removed, the Designation Value is 12 µg/m^3, measured at the Oakland-West site in 2017.

The Air District is not in attainment with the California 24-hour PM_{10} standard of 50 µg/m^3. The air monitoring data for the State 24-hour PM_{10} standard are:

1. The number of days that are estimated to exceed the standard,
2. The high of the 24-hour average, and
3. The 24-hour Expected Peak Day Concentration (EPDC).

Compliance with the 24-hour PM_{10} standard is determined as follows:

1. An Expected Peak Day Concentration (EPDC) is computed based on the available 24-hour data from each monitoring site,

2. The EPDC is an estimate of the 24-hour PM_{10} concentration that would be exceeded once per year on average,
3. Each site's Designation Value is the highest measured PM_{10} concentration below the EPDC, and
4. If the Designation Value exceeds 50 µg/m3 the site does not meet the standard.

During 2015-2017, the Bay Area does not meet the 50 $\mu g/m^3$ standard at the San Pablo monitoring site which had a Designation Value in 2017 of 95 $\mu g/m^3$. The 2017 Designation Value at San Pablo, excluding data affected by wildfires is 53 $\mu g/m^3$.

The Air District is not in attainment with the California Annual PM_{10} standard of 20 $\mu g/m^3$. The air monitoring data for the annual PM_{10} standard are:

1. The annual average at each monitoring site, and
2. The highest annual average during most recent three years.

Compliance requires the annual PM_{10} average at each monitoring location be at or below 20 $\mu g/m^3$ for each of the most recent three years. In 2015, the only site with an annual average above 20 $\mu g/m^3$ was San Jose, with a value of 21 $\mu g/m^3$. In 2017, San Francisco was the highest annual average at 22 μ/m^3, followed by San Jose at 22 $\mu g/m^3$ and San Pablo at 20 $\mu g/m^3$. There were no values exceeding 20 $\mu g/m^3$ during 2016. The 2015 value of 21 $\mu g/m^3$ is the highest for 2015 – 2017, when data in 2017 affected by wildfires are removed.

The Bay Area is not yet in compliance with California PM_{10} clean air standards.

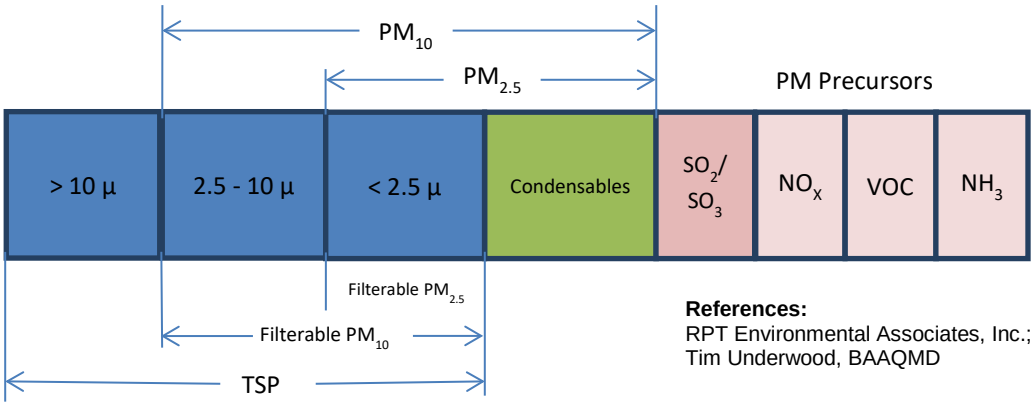
5. Particulate Matter Test Methods

Test methods used to characterize and quantify PM emissions have evolved over time. PM regulatory efforts initially focused on TSP, and EPA's original test method, EPA Test Method 5, was designed to measure TSP. EPA Test Method 5 measures the solid particles in a sample stream with a filter that is designed to collect 99.5 percent of all particles larger than 0.3 microns. The solid particles captured in the sample probe and on the filter are known as "filterable" PM. The Air District has its own testing procedures, which are set forth in the Air District's Manual of Procedures (MOP). The MOP Source Test Method ST-15 has been used to quantify PM emissions from permitted stationary sources in the Air District, and was in use prior to development of EPA Test Method 5. MOP Source Test Method ST-15 is similar to EPA Method 5. It collects solid matter on an in-stack filter that is designed to capture 99.5 percent of particles 0.3 micron and larger, i.e. all the filterable particles known as Total Suspended Particles. The MOP Source Test Method ST-15 reports emissions results for Total Suspended Particles (TSP) in units of +/- 0.002 grains/standard dry cubic feet, and in pounds per hour.

When the PM_{10} clean air standard replaced the TSP standard in 1987, EPA developed a revised test method to measure PM_{10}. The revision incorporated the addition of a cyclone that separated large particles from the PM_{10}. The revised test methodology is called EPA Test Method 201/201A.

When $PM_{2.5}$ requirements were added in 1997, Test Method 201/201A was further refined to differentiate PM_{10} from $PM_{2.5}$ by using an additional cyclone to segregate the particles larger than 2.5 microns from those smaller. After filtration, both test methods cool the sample stream to capture any liquid aerosols and solid particles that condense. The liquids and solids captured after cooling are known as "condensable" PM and were sometimes referred to as "back half" PM emissions. Condensable PM is measured by EPA Test Method 202. All condensable PM is considered $PM_{2.5}$, since it is formed after passing through a 0.3-micron filter. The condensable particles can also be separated into organic and inorganic condensable particulates. There is no standardized test method yet for ultrafine PM.

The following diagram shows the many forms of PM, and test methods needed to differentiate each. Regulation 6 defines these terms and test methods. Proposed amendments to Rule 6-1 will cite the specific test methods required for compliance.



Total Suspended Particles (TSP): PM that can be filtered out of a gas stream as measured using EPA Test Method 5.
PM_{10}: PM with an aerodynamic diameter equal to 10 microns or less, including both filterable and condensable particles.
$PM_{2.5}$: PM with an aerodynamic diameter equal to 2.5 microns or less, including both filterable and condensable particles.
Filterable PM_{10}: PM with an aerodynamic diameter equal to 10 microns or less that can be filtered out of a gas stream at its normal operating temperature. These liquid and / or solid particles are identified using EPA Test Method 201A.
Filterable $PM_{2.5}$: PM with an aerodynamic diameter equal to 2.5 microns or less that can be filtered out of a gas stream at its normal operating temperature. These liquid and / or solid particles are identified using EPA Test Method 201A.
Condensable PM: Liquid droplets that coalesce, or gaseous emissions that condense to form liquid or solid particles. These liquid and/or solid particles are identified as condensable organic or condensable inorganic PM using EPA Test Method 202.
PM Precursors: Air pollutants that can react with each other to form solid or liquid particles.

A significant amount of source testing has taken place on the Bay Area's largest stationary sources. Mid-sized stationary sources in the Bay Area have source tests done based on a recurring test schedule, and smaller stationary sources have source tests done upon request. As test methods changed over the years, the historical source test results have been a mix of TSP, PM_{10} and $PM_{2.5}$ information, sometimes clearly identified as "filterable" and "condensable" PM, and sometimes not clearly identified. Quality and comparability of the Air District PM data will improve with use of consistent source test methods.

Measuring Visible Emissions Opacity

Opacity is a measurement of the degree to which particulates in an exhaust stream or dust plume obscure the ability of an observer to see through the exhaust stream or dust plume. Opacity can also be measured with instrumentation by a beam of light's ability to pass through the exhaust stream without being reflected by any particles in the exhaust stream. As such, opacity is a surrogate for the much more complicated and time intensive source testing (mass-based measurements) of PM emissions. Regulation 6, Rule 1: General Requirements, Regulation 6, Rule 3: Wood-burning Devices, and Regulation 12, Rule 4: Sandblasting all refer to the opacity test method cited in the MOP, based on EPA Test Method 9. This opacity test method requires a person to be trained and certified to view and "read" the degree to which the emissions obscure the observer's view. If the emission is dark-colored, results are most often reported using the Ringelmann scale from zero to five, representing 20 percent increments of reduced opacity. If the

emission is light-colored, results are most often reported using increments of five percent opacity. EPA Method 9 defines the observer's positioning requirements in relation to the emission (with the sun at the observer's back), and requires the observer to view, read and record the opacity once every 15 seconds for a six-minute observation period. Opacity limits are typically defined as "no more than 20 percent opacity (or Ringelmann 1) for no more than a cumulative six minutes (which would be 24 readings at 15 second intervals) in any one-hour observation period."

EPA provides three other source test methods for assessing opacity that supplement EPA Method 9. EPA Method 203A uses the same qualifications and methods as EPA Method 9, yet provides for "time-averaged" opacity readings every 15 seconds for observation periods other than 6 minutes long. EPA Method 203B provides a "time-exception" method where a facility may be allowed to exceed an opacity threshold for a certain period (example being three minutes in an hour) but not longer. EPA Method 203C provides for instantaneous opacity readings (every 5 seconds) where 12 consecutive readings can be averaged to provide a one-minute average opacity.

EPA has recently certified an alternate method, based on an American Society for Testing and Materials (ASTM) procedure, to measure opacity by using a digital camera and calculating the opacity based on the digital picture of the emissions compared to the background. The Air District is working with this technology to determine what role it may play in the future.

Observing Visible Dust Plumes

Fugitive dust can also be regulated by defining requirements that limit "visible emissions," in terms of whether dust or a dust plume is visible or not. The only requirement for observing emissions is to have the sun (or other source of light) positioned behind the observer, as described in EPA Method 9. EPA Test Method 22 uses the same requirements for observer positioning as EPA Method 9, and assesses whether the emission is visible (or not) once every 15 seconds for the duration of an observation period.

6. Bay Area PM Emissions Sources

This Section provides a summary of the technical review that Air District staff has undertaken to review and identify the initial opportunities to reduce PM emissions. Air District staff first reviewed the PM emissions inventory to identify source categories with the potential for significant PM emissions reductions, and where the Air District has regulatory authority to address these sources. Staff then evaluated control technologies that could be applied to reduce emissions in the various significant emissions categories. A complete review of the research done to develop the draft amendments to Rule 6-1, and two proposed new rules is shown in Attachment 1.

Air District PM Emissions Inventory

A summary of the 2011 Emissions Inventory is shown below in Table II-3. Complete details of the 2011 Emissions Inventory for PM are shown in Attachment 1-1.

Table II-3: 2011 Particulate Emissions Inventory - tons per day (tpd)

Source Categories	TSP	PM_{10}	$PM_{2.5}$
Petroleum Refining	**0.38**	**0.27**	**0.16**
Other Industrial / Commercial Processes			
Chemical Manufacturing	0.43	0.39	0.38
Cooking	2.81	2.81	1.80
Other Food and Agricultural Processes	0.63	0.44	0.26
Metallurgical Foundries & Forging	0.98	0.61	0.46
Metal Recycling and Shredding	0.14	0.10	0.07
Wood Products Manufacturing	0.15	0.10	0.06
Cement Manufacturing	0.12	0.11	0.08
Asphalt Concrete Plants	0.55	0.22	0.18
Concrete Batching	1.21	1.11	0.75
Glass & Related Products	0.71	0.69	0.68
Stone, Sand & Gravel	0.86	0.43	0.06
Sand Blasting	0.35	0.17	0.01
Landfills	6.35	1.56	0.22
Waste Management - other	0.35	0.34	0.32
Other Industrial / Commercial	1.07	0.75	0.45
Subtotal	**16.71**	**9.83**	**5.78**
Combustion – Stationary Sources			
Domestic Combustion - space heating	0.70	0.70	0.70
Domestic Combustion - water heating	0.47	0.47	0.47
Wood Stoves	2.59	2.42	2.33
Fireplaces	8.88	8.31	8.00
Gas Turbines	0.89	0.88	0.88
Petroleum Refinery Combustion	2.51	2.51	2.45
Landfill Flares	0.11	0.11	0.11
Other Natural Gas Combustion	1.41	1.41	1.41
Planned Fires (prunings, crops, weeds, etc.)	0.32	0.29	0.27
Subtotal	**17.88**	**17.10**	**16.62**
Off-Road Mobile Sources	**5.83**	**5.76**	**5.66**
On-Road Motor Vehicles	**12.70**	**12.51**	**6.69**
Construction	**23.44**	**11.47**	**1.14**
Farming	**3.48**	**1.58**	**0.23**
Accidental Fires	**1.39**	**1.25**	**1.20**
Entrained Road Dust	**59.42**	**28.05**	**4.00**
Animal Waste	**19.05**	**9.17**	**1.05**
Wind Blown Dust	**10.40**	**5.25**	**1.03**
Tobacco Smoke & Miscellaneous	**3.52**	**3.39**	**2.75**
Total	**174.20**	**105.63**	**46.31**

A complete analysis of the emission inventory is available in Attachment 1-2.

Review of Bay Area Stationary Sources for Potential PM Reductions

PM from Combustion

Combustion of various fuels and materials from stationary sources is the single largest category of PM emissions. Rule 6-3 is very effectively addressing PM from fireplaces and woodstoves. However, the remaining sources are much more difficult to control.

The primary control technology used for natural gas combustion sources to minimize direct emissions of PM is “good combustion practice,” which means ensuring that combustion is as complete as possible. Normally good combustion practice is indicated by low carbon monoxide (CO) concentration in the outlet stream, since low CO concentrations are an indication of

complete combustion. Natural gas is by far the cleanest burning fuel because it usually has a very consistent heating content, and is relatively easy to mix the fuel and air as needed for clean combustion. PM from combustion for space heating and hot water is dependent on the design of the furnace, boiler or water heater. In general, this equipment is very efficient, and burns cleanly. The reason the PM emissions are high from this equipment is that a large volume of natural gas is burned in these devices for heating across the entire Bay Area.

PM emissions from gas turbines, and electrical power generating stations are significant because they are large combustion sources, and most burn natural gas. Gas turbines generally have CO emissions limits in their operating permit to ensure complete combustion. Rule 9-11 limits NOx from electrical power boilers, and includes a CO emission limit to ensure complete combustion.

PM emissions from refinery combustion are significant, because refineries are large combustion sources, and they burn refinery process gas. Refinery process gas does not burn as cleanly as natural gas because it is a variable mixture of fuels from various refining processes. Rule 9-10 limits NOx from refinery combustion, and includes a CO emission limit for all refinery process heaters to ensure complete combustion.

Liquid fuels like jet fuel, diesel and fuel oil produce much higher PM emissions. Solid fuels like petroleum coke (and coal, although no coal is burned the Bay Area) create the highest PM emissions. Most industrial sources in the Bay Area burn natural gas, and refineries burn refinery fuel gas.

Although it is less common, several types of sources such as foundries and calciners use incinerators or thermal oxidizers for particulate control. Incinerator efficiencies can range from 25 to 99 percent, depending on the source and design of the incinerator.

As mentioned above, diesel truck exhaust is a significant source of $PM_{2.5}$ in the Bay Area. CARB is phasing in clean burning diesel fuel requirements, which also apply to non-emergency stationary diesel engines. Clean burning diesel fuel coupled with diesel particulate filters can reduce diesel $PM_{2.5}$ by 85 percent.

PM from Wide Variety of Stationary Sources

Table II-4 shows the Source Categories that are considered significant sources of PM, and are stationary sources (either point sources or area sources) where the Air District has jurisdiction to regulate the emissions. There are two broad areas where emission reductions may be achieved: i) industrial emissions from materials processing, and ii) fugitive dust from a variety of sources such as construction sites, disturbed surfaces and road dust.

Table II-4: Stationary Source Categories Considered for Rule 6-1 Amendments

Source Category	TSP tpd	PM_{10} tpd	$PM_{2.5}$ tpd
Petroleum Refinery Processing[a]	0.38	0.27	0.16
Chemical Manufacturing	0.43	0.39	0.38
Other Food and Agricultural Processes	0.63	0.44	0.26
Wood Products Manufacturing	0.15	0.10	0.06
Asphaltic Concrete Plants	0.55	0.22	0.18
Concrete Batching	1.21	1.11	0.75
Glass & Related Products	0.71	0.69	0.68
Stone, Sand & Gravel	0.86	0.43	0.06
Landfills	6.35	1.56	0.22
Waste Management – other	0.35	0.34	0.32
Other Industrial / Commercial	1.07	0.75	0.45
Construction – 5 source categories	23.44	11.47	1.14
Entrained Road Dust – 6 source categories	59.42	28.05	4.00
Total:	95.55	45.82	8.66

[a] Excludes combustion at refineries

Twenty-two stationary source categories were identified, consisting of 2,455 permitted stationary sources with particulate matter emissions. These sources were screened to focus on the largest of these facilities, 55 of which emit more than 90 lb/day of particulates. These 55 large sources represent slightly more than 2.2 percent of the permitted sources and approximately 85 percent of the total emissions.

Staff visited each of these 55 facilities to assess the current conditions, and understand what the potential impact would be if PM control requirements were placed on these operations. Some of these 55 facilities have PM emissions from industrial stacks and vents and could be affected by the more stringent TSP concentration and mass emissions limits proposed in the draft amendments to Rule 6-1. Some of these source categories are sources of fugitive dust so more stringent visible emissions limits may have an impact. Background information and the potential for reduced PM emissions are summarized for each of these sources below. These assessments provide the basis for estimated PM emissions reductions and estimated costs for these facilities to comply with potential PM controls. A complete analysis of the potential for PM controls and associated emission reductions are shown in Attachment 1-3.

7. Opportunities for PM Emissions Reductions

Industrial Stacks and Vents

Most industrial stacks and vents have permit limits based on Best Available Control Technology (BACT) at the time the facilities were installed or modified, but a few do not. New general requirements from the proposed amendments to Rule 6-1 will affect the facilities that do not have stringent permit conditions. Amendments to Rule 6-1 are proposed separately along with its own staff report.

Fugitive Dust from Bulk Materials, Construction Sites, and Disturbed Surface Areas

Bulk material stockpiles, construction projects and disturbed surfaces are susceptible to wind erosion, and can be significant sources of fugitive dust. While fugitive dust is a significant source of PM emissions, the particle size of the dust depends on the specific material. Dust from gypsum is almost 90 percent PM_{10}, and approximately 50 percent $PM_{2.5}$. About half (50 percent) of most typical geologic dust is larger than 10 microns, and only about 5 percent is smaller than 2.5 microns. Most grains used for flour and animal feed are only 30 percent PM_{10}, and about one percent $PM_{2.5}$. Fugitive dust, which can cause haze and quality of life issues, is a moderate contributor to the $PM_{2.5}$ concerns about health impacts. Analysis of data collected by Air District

particulate matter monitors indicates that geological material comprises a small part (less than 10 percent) of the PM_{10} and $PM_{2.5}$ in the atmosphere. This is likely since these kinds of particles tend to settle out of the air rather quickly. In addition, sources of fugitive dust are many, varied, and spread widely across the Bay Area.

While preventing and controlling fugitive dust is helpful in reducing area haze and PM_{10} levels, it is less effective at reducing $PM_{2.5}$–the particles with greatest health impact. Most of the practical fugitive dust control strategies use water to wet dusty areas. Given the severe drought situation in California, staff believes the concerns about the lack of water currently outweigh the need for general fugitive dust controls at this time, in light of the fact that fugitive dust is a moderate contributor to the $PM_{2.5}$ and related health impacts. Staff proposes to focus on the highest impact sources of fugitive dust while minimizing water consumption.

Bulk Material Storage and Handling

As cited above, wind erosion at bulk material storage and handling facilities can create significant dust, particularly when handling fine solids like gypsum, or even gravel and sand from rock quarries. The Air District has received numerous complaints about coke dust and coal dust. Coke and coal stockpiles and loading / unloading are unique in that fugitive dust from these products is black and highly visible as compared to geologic dust. Since black coke and coal are sources of nuisance complaints, staff is including coke and coal storage and handling within the broader category of bulk materials. Staff has incorporated new draft requirements to control dust from bulk material storage and handling operations into the proposed amendments to Rule 6-1.

Trackout

Trackout is a concern at bulk material sites, construction sites, and disturbed surface areas including landfills. As mentioned above, water is often used to control dust. Mud can form at these locations, and accumulate on the bottoms of vehicles and vehicle tires. When vehicles leave the work site, they can track mud out onto a public roadway. Over the next 50 - 100 feet of the road, the mud falls off the vehicles and tires. As the mud dries, the dirt remains on the paved road where subsequent traffic can pulverize the dirt into silt, and the turbulence from the passing vehicles entrains the silt into the air. This mud / residual dirt is called trackout. Trackout can be a significant source of $PM_{2.5}$, and can be controlled cost effectively by knocking or washing the mud off the vehicles before they leave the facility. A new rule is proposed separately with its own staff report.

Staff proposes a new rule (new Rule 6-6) to prohibit trackout of mud and dirt onto adjacent public roadways, where subsequent traffic can pulverize the dirt into silt, and turbulence from the passing vehicles entrain the silt into the air. This material is one source of road dust that can readily be controlled.

Paving and Roofing Asphalt Operations

PM emissions from both paving asphalt and roofing asphalt are odorous, as well as estimated to be 95 percent $PM_{2.5}$. Asphalt is applied at high temperatures (250 - 325°F) for paving asphalt, and even higher temperatures (400 - 500°F) for roofing asphalt. Asphalt emits odors, and some of the hot asphalt appears to volatize and then subsequently condense into very small liquid aerosols or solids that take the form of smoke. This is commonly known in the asphalt industry as “blue smoke,” and asphalt fumes from both paving and roofing asphalt are associated with eye, nose and throat irritation. Roofing asphalt is applied at very high temperatures, and there is typically significant smoke and fumes that come from both the heater / storage unit (known as an asphalt kettle), and during application of the hot asphalt on the roof. The smoke is vaporized asphalt that forms odorous liquid aerosols and solid particles ($PM_{2.5}$) when exposed to cooler air. Data conflict regarding whether these fumes are toxic or not. Staff investigated controls for both paving asphalt and roofing asphalt, and could find no cost-effective control methods beyond what is currently done. While a draft rule to address roofing asphalt was presented at workshop, more

detailed cost information indicates low-fuming roofing asphalt is only available from one supplier, and the incremental cost is prohibitive. Staff will not move forward with any proposal to control paving asphalt or roofing asphalt at this time.

8. Current Emissions Control Technology and Methods

As noted above, particulate emissions come from two general types of stationary sources. The first type of source involves processing of various solid materials that are contained inside equipment and ducts, so the subsequent emissions are typically emitted through a stack or vent. The second type of source is more general in nature: dust coming from stockpiles of bulk materials, activities during construction projects and from vehicle traffic on unpaved roadways and disturbed surface areas. The control technologies available to address these two broad areas of PM emissions are discussed below.

PM Emissions from Combustion

PM emissions from combustion, and methods to control / prevent these particulates is discussed above. Staff has no recommendations to reduce PM emissions from combustion during this rule-making, but is developing rules as described in the Air District-wide Combustion Strategy included in the 2017 Clean Air Plan. This combustion strategy will focus on improving energy efficiency to reduce the total fuel burned, and analyze specific sources where stack dimensions can be modified to reduce localized impact on neighbors.

Liquid fuels like jet fuel, diesel and fuel oil produce much higher PM emissions than gaseous fuels like natural gas, but are also difficult to control. CARB is phasing in clean burning diesel fuel requirements, which also apply to non-emergency stationary diesel engines. Clean burning diesel fuel coupled with diesel particulate filters can reduce diesel $PM_{2.5}$ by 85 percent.

Solid fuels like petroleum coke (and coal, but no coal is burned the Bay Area) create the highest PM emissions. Although it is less common, several types of sources such as foundries and calciners use incinerators or thermal oxidizers for particulate control. Incinerator efficiencies can range from 25 to 99 percent, depending on the source and incinerator design. Combustion of solid fuels is rare, and must be analyzed on a case-by-case basis.

PM Emissions from Industrial Stacks and Vents

Solid materials are generally moved through an industrial production process with conveyor belts and / or elevators. Particulates can be contained within equipment, or with shrouding or ducts surrounding the conveyors. The equipment or ducts are kept under a slight vacuum by drawing air into the equipment through ducts with suction from an induced draft fan. This slight vacuum keeps the solids from leaking into the surrounding area. The discharge from the fan is routed through a control device, to a stack or vent piping. Three types of control equipment are typically used to abate particulate emissions from stack or vents at industrial facilities:

- Wet mechanical scrubbers and / or cyclones,
- Baghouses, or
- Electrostatic precipitators

If the process is compatible, water is often injected into the suction produced by the induced draft fan to serve as a wet mechanical scrubber (generally known as a roto-clone). If the process is not compatible with water, a cyclone is installed on the discharge of the fan to control the PM emissions. Wet mechanical scrubbers and cyclones are most effective on large particulates. Table 5 (below) shows that neither device is very effective at controlling small particles less than 2.5 microns.

Baghouses and Electro-Static Precipitators (ESP's) are far more effective at controlling small particles less than 2.5 microns. Baghouses use bags made of cloth, or various plastics to filter

out particles. The particles collect on the outside surface of the filter cloth, where the particles themselves can establish a filter-cake that serves to filter out additional particulates in the effluent stream. The baghouse is designed to periodically shake or backflow the process stream to remove the filtered particles, collecting these particles for disposal or recycling back into the production process. ESP's are most effective on particles that are susceptible to accepting a positive electrical charge from exposure to high voltage electrodes. Once charged, these particles are then electrically attracted to grounded plates inside the ESP. Similar to the baghouse; the ESP is designed to periodically shake the grounded plates to remove the filtered particles. Table 5 indicates that baghouses and ESP's are far more effective at controlling small particles less than 2.5 microns than cyclones or wet scrubbers.

Table 5: Particle Size versus Percent Abatement Efficiency[11]

Particle Size	Cyclones	Wet Scrubber	Baghouses	ESP's
< PM_{10}	80%	82% - 95%	94% - 99%	94% - 99%
< $PM_{2.5}$	50%	50% - 92%	93% - 99%	90% - 99%

Cyclones and baghouses, or wet mechanical scrubbers and ESP's can be used in tandem to achieve Best Available Control Technology. The first stage (cyclone or wet scrubber) removes the bulk of the larger particulate matter, and the second stage (baghouse or ESP) removes most of the remaining smaller particles. These systems have demonstrated particulate matter removal to levels of 0.001 - 0.002 grains/dry standard cubic foot. The abatement efficiencies shown in Table II-5 are based on EPA's analysis of coal and biomass combustion. These control technologies are not appropriate for all the Bay Area's diverse source types, especially for combustion of liquid and solid fuels.

Wet scrubbers and wet electrostatic precipitators are the only technologies that address condensable PM, because wet scrubbers and ESP's cool the effluent stream with water. As discussed previously, condensable PM starts as a gas, then condenses around a nucleus (typically a solid particle) as it cools in the atmosphere, and remains a liquid aerosol in the ambient air. Cyclones, baghouses, and dry ESP's typically operate at high temperatures, so condensable PM is not controlled because the effluent remains in a gaseous state. It may be possible to improve abatement efficiencies by cooling the gases before they enter the abatement devices. Cooling techniques may be considered in the future as a possible control strategy.

Review of EPA's BACT / LAER and ARB's BACT Clearinghouse

EPA provides a searchable database of current knowledge for Reasonably Available Control Technologies (RACT), Best Available Control Technologies (BACT), and Lowest Achievable Emission Rates (LAER). Use of BACT results in the lowest feasible emissions for a source and is required of significant new permitted sources under Air District Regulation 2, Rule 2: New Source Review. LAER is a summary of installed technology that achieves the lowest emissions in practice. CARB provides a similar database called the BACT Clearinghouse. Staff searched both databases to identify PM_{10} and $PM_{2.5}$ BACT controls for particulate matter sources in other air districts and other states. ARB's BACT Clearinghouse currently has no references for $PM_{2.5}$. EPA's BACT / LAER Clearinghouse provides information for both PM_{10} and $PM_{2.5}$. The EPA's BACT / LAER Clearinghouse search results provide examples of industry specific controls, and indicates the most effective controls were the same for both PM_{10} and $PM_{2.5}$, although the allowable emission rates for each were different. There were no additional technologies identified specifically for $PM_{2.5}$ and no mention of controls for condensable $PM_{2.5}$.

[11] EPA Control Techniques Document for Fine Particulate Matter dated 10/1998.

Control of Fugitive Dust

Prevention of wind erosion is the primary control method used for most fugitive dust. Dust can be generated by a wide variety of human activities, including disturbing natural surface areas where wind can subsequently create windblown dust. Entrained dust from vehicle traffic on both paved and unpaved surfaces can also be significant.

Current Controls – Rule 6-1 and Storm Water Requirements

The Air District currently does not have any regulations that directly target fugitive dust, other than the general opacity limits and the New Source Review requirements in Regulation 2, Rule 2. Section 6-1-301 establishes a Ringelmann No. 1 emission limit, and Section 6-1-302 establishes a 20 percent opacity limit for no more than three minutes in any hour observation period. These provisions do not necessarily prohibit all fugitive dust emissions of concern. Moreover, the average worker at a site that may generate fugitive dust emissions, such as construction sites or bulk materials storage sites, does not readily understand opacity requirements based on the Ringelmann scale. An observer must be rigorously trained and become certified to measure dust plume opacity using the Ringelmann scale, and although Air District inspectors receive such training and certification, few workers in the field do. If workers in the field cannot determine when the dust is excessive, they are unlikely to take any corrective actions. For these reasons, the Air District's current PM regulations do not adequately address fugitive dust emissions.

Many construction sites and other sites where earth-disturbing activities are undertaken are subject to storm water runoff prevention requirements under CEQA and Regional Water Quality Control Board storm water discharge permits. These authorities normally require affected sites to develop Storm Water Pollution Prevention Plans (SWPPP) that utilize Best Management Practices (BMP's) to limit dirt, mud and silt in water runoff into downstream waterways. Some of these SWPPP BMP's also target control of fugitive dust. SWPPP requirements are enforced through a State General Construction Storm Water Permit system that applies to most storm water discharges associated with construction activity. The State General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ, amended by 2010-0014-DWQ & 2012-0006-DWQ) requires construction sites to electronically file various compliance documents, including a Storm Water Pollution Prevention Plan (SWPPP), to the State Water Board. The Regional Water Quality Control Boards may also issue General Construction Storm Water Permits. These existing requirements mean that many sites are already implementing control measures necessary to prevent significant fugitive dust emissions.

The SWPPP guidance documents provide several Best Management Practices (BMP's) that may be needed to control soil erosion so that excessive dirt and mud do not enter the storm water system and do not pollute downstream waterways. Several of these BMP's also apply to wind erosion, and apply to control of trackout, spills, and soil erosion onto public paved roads. A certified SWPPP preparer must identify site specific BMPs needed to ensure water effluent from a construction site is acceptable. A certified SWPPP inspector must monitor implementation of the required BMP's to ensure the plan is implemented effectively. The SWPPP does not require firm pH (acidity) or turbidity limits because each construction site is unique. However, each SWPPP does identify contingency action levels if storm water quality exceeds limits included in the plan.

The BMP's that are applicable to fugitive dust control includes the following categories:

- Erosion Control
- Sediment Control
- Trackout Control
- Non-Storm Water Management
- Waste Management Materials

Any draft requirements for control of fugitive dust or trackout should be consistent with the SWPPP requirements.

Significant resources exist to help with development and implementation of SWPPP's, including details on BMP's. Examples are:
http://www.dot.ca.gov/hq/construc/stormwater/caltrans_guidance_manual-rev1.pdf
http://www.dot.ca.gov/hq/construc/stormwater/BMP_Field_Master_FullSize_Final-Jan03.pdf
http://www.dot.ca.gov/hq/construc/stormwater/documents/SWPPP_Prep_ManualJune2011.pdf

The best information is available from the California Storm Water Quality Association, for a nominal subscription fee: https://www.casqa.org/resources/bmp-handbooks.

Control Measures

Prevention of wind erosion usually takes one of five approaches:

- Minimize the surface area being disturbed at any given time.
- Apply dust suppression measures when needed.
- Establish wind breaks, and limit work on windy days.
- Limit traffic on disturbed surfaces, and limit vehicle speeds.
- Prevent dirt, mud, and solids spills; and clean up any spills that have the potential to create dust immediately.

As mentioned above, control of wind erosion is currently required for construction projects larger than one acre of disturbed surface area by the State Water Quality Board. They have requirements to develop a SWPPP that follows BMP's to limit dirt, mud and silt in water runoff into downstream waterways, and include dust control.

Control measures by necessity are different in areas where active dust generating operations are underway, as opposed to inactive areas. Dust control measures in active areas include:

- Pre-watering, and keeping disturbed surfaces damp during earth moving operations.
- Keeping dusty materials damp, especially when processing these materials.
- Providing wind barriers or enclosing dusty material handling and storage areas.
- Keeping storage piles covered.
- Limiting vehicle traffic to paved or stabilized surfaces.
- Limiting vehicle speeds.
- Preventing dirt, mud and other solids from being tracked out or spilled onto paved roadways.
- Preventing erosion of dirt or mud onto paved roadways.

Other control techniques for a wide variety of sources are found in Attachment 1-5.

Figure II-2: Water Truck

Water truck used to keep unpaved roadways damp.

Dust control in inactive areas includes:

- Using wind erosion controls, like trees or bushes, wood or rock walls, earthen banks, or permanent wind breaks.
- Appling chemical dust suppressants that will form a crust on the disturbed surface by absorbing moisture from the air.
- Growing vegetative ground cover. Even if the vegetation dries up during the dry season, the plant root systems will prevent wind from eroding the soil

Test methods for soil stabilization are found in Attachment 1-6.

Control of Trackout onto Paved Roads

Facilities that use water to control dust can create a problem with mud that sticks to vehicles and vehicles' tires, then carrying the mud out onto an adjoining paved roadway. Any dirt that accumulates on a paved roadway can and will be pulverized into fine particles by passing vehicle tires, and then entrained into the air by the turbulence from passing vehicles.

Most facilities have a truck "grizzly" bar or a rumble strip to prevent trackout onto the public roadways. Rumble strips are typically a series of pipes or bars on six-inch centers used to shake the vehicle, and dislodge any mud from the vehicle. In addition, these bars or pipes are designed to flex the vehicle's tires, and dislodge mud from between the tire treads before it leaves the property.

Figure II-3: Grizzly used to control Trackout

A critical, and often overlooked element of ensuring a grizzly or rumble strip is effective is to keep the area under the rumble strip clear of accumulated mud. When this area below the grizzly fills with mud, the rumble strip is no longer effective at removing mud from the vehicle or tires.

In addition, some facilities use a truck wash station designed to clean mud from the tires and under-carriage of the vehicle. Other facilities have long paved roads prior to reaching the public traveled roadways that are either washed down or kept clean with street sweepers.

Figure II-4: Truck-wash Station used to control Trackout

There are typically three ways to mitigate road dust:

- Support vegetation on median strips and next to road shoulders to minimize wind erosion,
- Water flush,
- Mechanically sweep or vacuum sweep.

The vegetation strategy is best when built into the design of highways and freeways. Water flushing is effective, but creates the concern of flushing silt into the groundwater.

Street sweeping is often the most practical, and has the advantage of removing trash, litter and various other debris from the roadways. However, mechanical sweepers often create as much dust as they prevent. Some sweeper designs include a water spray ahead of the sweeper to control dust, but that often just wets the silt and allows it to cling to the road or gutter surface, rather than being swept up. Vacuum sweepers are far more effective at collecting and removing road dust. Street sweepers are now available equipped with air jets to blow silt from the cracks in the street, coupled with high capacity vacuum systems to prevent creation of a dust cloud during the sweeping operation, combined with high efficiency air filters on the discharge of the vacuum systems to capture more than 80 percent of PM_{10}. However, even these most effective street sweepers must be operated within strict design guidelines to achieve 80 percent cleanup efficiency. Street sweepers are typically designed to operate at speeds of less than five miles per hour (mph). It is common to see street sweepers operating at 10 – 25 mph, particularly on freeways. At speeds greater than 10 mph, street sweeping can aggravate road dust problems by re-entraining road dust rather than recovering it.

Figure II-5: Street Sweeper

A situation similar to trackout occurs when spills from passing vehicles leave solid materials on the roadway that can be pulverized and entrained into the air. This material is called carryout, and controls include ensuring the vehicle does not leak either solids, or liquids containing solids, and covers for the material so that solids are not blown out of the top of the vehicle at higher speeds. California Motor Vehicle Code, Section 3.3.6 currently has requirements to control spills and carryout.

Control of Asphalt

Control of Paving Asphalt

Paving asphalt is a mixture of asphaltic cement (liquid asphalt from a refinery) combined with gravel to give it strength. Paving asphalt may be applied hot (300 – 350°F), or can be applied at cooler temperatures if solvents or water emulsions are used to keep the asphalt pliable and workable at the lower temperature. When paving asphalt is transferred from a storage bin into a delivery truck (known as load-out), a small portion of the hot asphalt vaporizes, creating smoke and fumes. This smoke is vaporized asphalt that forms odorous liquid aerosols and solid particles ($PM_{2.5}$) when exposed to cooler air. This smoke usually creates a haze that is blue in color, so it is called “blue smoke”. Blue smoke can be captured and controlled by drawing the aerosols with an induced draft fan through ducts into a filtration system. These blue smoke abatement systems are currently in place in at least two asphalt plants and being installed in a third asphalt plant in the Bay Area.

Control of Chip Seal Paving Asphalt

Chip seal paving is a technique for lightly traveled roads where existing pavement with cracks can be repaired by spraying hot asphalt onto the cracked pavement so the asphalt will fill the cracks, then spreading light gravel on the asphalt and pressure rolling the gravel smooth. Chip seal asphalt is like paving asphalt, normally applied hot (300 – 350°F). Since this asphalt is sprayed, it can produce a large quantity of blue smoke. Blue smoke abatement is also available for chip seal spray systems. A portable module with an induced draft fan, suction hoods and ductwork are positioned next to the chip seal spray nozzles, and is quite effective at capturing and controlling the blue smoke aerosols.

Control of Roofing Asphalt

Control of smoke and odors from roofing asphalt is a challenge. Smoke and odors come from the asphalt kettle where plugs of roofing asphalt are heated to above 400°F, and smoke and odors occur again when the roofing asphalt is delivered onto the roof, and spread across the rooftop.

BMPs for roofing asphalt kettles include kettle siting to minimize impact on people, temperature control of the asphalt in the kettle (to prevent overheating the asphalt), keeping the kettle closed, and having good seals on the edges of the kettle openings. Compliance with these management practices is driven primarily by safety and efficiency, but also supports emission reduction of both PM and odors.

One roofing asphalt manufacturer has developed a polymer additive that when added to the asphalt creates "low-fuming" roofing asphalt. This polymer floats on the surface of the asphalt to prevent asphalt vaporization, and significantly reduces fumes from the asphalt kettle by 60 – 80 percent. However, this control method does not help reduce emissions during application of the hot asphalt on the roof. This product, known as low-fuming roofing asphalt, appears to be an improvement in worker exposure to fumes as well as providing a reduction in PM emissions and odors. Other roofing asphalt manufacturers have developed a "low-odor" roofing asphalt by adding an odorant to make the smell more pleasing, but it does not reduce smoke or PM emissions.

B. Regulatory History

Air District staff reviewed the existing framework of regulations that address PM emissions sources. The Air District's efforts to further address the health impacts from PM in the ambient air will be implemented on the foundation of these existing regulations. The discussion below describes the current regulatory framework addressing PM emissions, including a review of the Air District's existing PM regulations and how they interplay with state and federal law.

1. Air District Rules / Regulations

The Air District has long been concerned about particulate matter. Regulation 6 was adopted in 1973, and other regulations that address PM, including Regulation 5, Open Burning. However, on-going research and developments in medical science and public health have identified small particulates as having the greatest health impacts. PM regulations that began addressing Total Suspended Particles (TSP) have subsequently focused on PM_{10} and $PM_{2.5}$, and have become more stringent as the health impact of fine particles becomes clearer. The Air District's lack of attainment with the California Ambient Air Quality Standards requires that we take strong regulatory action to address PM.

There are currently eleven Air District rules directly addressing PM emissions:

- **Regulation 2, Permits, Rule 2: New Source Review**: This rule requires new and modified sources of specified "criteria" pollutants, including PM, to implement BACT to limit emissions. The BACT standard is a technology-forcing requirement that requires new or modified sources to install the latest "state-of-the-art" emissions control technology.
- **Regulation 5, Open Burning**: This rule prohibits open fires within the San Francisco Bay Area, with certain important exceptions.
- **Regulation 6, Particulate Matter, Rule 1: General Requirements**: This rule contains the Air District's general limitations on PM emissions, and is the rule for which the Air District is currently proposing amendments. This rule is described in more detail in the staff report for the proposed amendments to Rule 6-1.
- **Regulation 6, Particulate Matter, Rule 2: Commercial Cooking Equipment**: This rule limits the PM_{10} emissions from charbroilers used in restaurants.
- **Regulation 6, Particulate Matter, Rule 3: Wood Burning Devices**: This rule prohibits wood burning during wintertime "Spare the Air" alerts.

- **Regulation 6, Particulate Matter, Rule 4: Metal Recycling and Shredding Operations**: This rule requires metal recyclers to develop and implement site-specific emissions control plans approved by the Air District.
- **Regulation 6, Particulate Matter, Rule 5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units**: This rule establishes a limit of 10 parts per million by volume, dry (ppmvd) ammonia from FCC's, or requires the refinery to conduct operational testing and source tests to establish enforceable ammonia emission limits that minimize total $PM_{2.5}$ emissions.
- **Regulation 9, Inorganic Gaseous Pollutants, Rule 13: Nitrogen Oxides, Particulate Matter, and Toxic Air Contaminants from Portland Cement Manufacturing**: This rule requires that TSP emissions (as measured by EPA Test Method 5) are less than 0.04 pounds per ton of clinker produced from the kiln, and less than 0.04 pounds per ton of clinker produced from the clinker cooler. In addition, emissions from any miscellaneous operations or emission point must meet opacity limits of no more than 10 percent for no more than cumulative three minutes in any hour observation period. Each facility must also implement a wide variety of Fugitive Dust Mitigation Control Measures.
- **Regulation 10: Standards of Performance for New Stationary Sources**: This rule incorporates the EPA's requirements for New Source Performance Standards (NSPS) by reference into the Air District's regulations.
- **Regulation 12, Miscellaneous Standards of Performance, Rule 4: Sand Blasting**: This rule requires sand blasting operations to meet stack opacity limits of no more than 20 percent for no more than cumulative three minutes in any hour observation period.
- **Regulation 12, Rule 13: Foundry and Forging Operations**: This rule requires foundry and forging operations to develop and implement site specific emissions control plans approved by the Air District.

The Air District has adopted and updated these rules periodically over time.

Source Specific Bay Area PM Regulations

The Air District currently has a few PM rules that apply broadly to all sources, and several additional rules that apply to specific industries and categories of PM sources. As the Air District moves forward to further control PM emissions, staff will consider each large source category of PM emissions and determine the best approach to control that source category. Such initiatives will be undertaken in separate rulemaking projects. Proposed new Regulation 6: Common Definitions and Test Methods has been developed to provide the over-arching definitions and test methods for the current PM rules and potential future source-specific regulations.

2. State Regulations

Most CARB PM-related regulations are directed at mobile sources – primarily diesel engines. With respect to stationary sources, state law authorizes local air districts to adopt PM regulations and leaves the ultimate decision of how best to regulate stationary source PM emissions to each district's Board of Directors. California air pollution control laws set standards for several specific source categories, such as pile-driving hammers, sandblasting operations, and portable diesel equipment in order to ensure statewide consistency, and state law provides guidelines for the local air districts to regulate agricultural burning.

3. Federal Regulations

Federal law also leaves the primary role in regulating PM emissions from stationary sources to local agencies. The EPA has promulgated regulations to limit criteria pollutants from new and modified sources known as New Source Performance Standards (NSPS), as well as regulations

aimed at the toxic air quality impacts known as National Emissions Standards for Hazardous Air Pollutants (NESHAP). The federal NSPS and NESHAP encompass a wide variety of specific stationary source categories, as listed in Attachment 1-4. The federal regulations delegate responsibility to enforce these requirements to the local air quality agencies. The Air District has incorporated the NSPS requirements by reference into Air District regulations in Regulation 10; and it enforces the NESHAP by incorporating the NESHAP standards into Air District permit conditions for affected sources, which are enforceable by the Air District under the California Health & Safety Code. Beyond these requirements, the federal Clean Air Act also authorizes local districts to adopt additional, more stringent requirements as needed to achieve the National Ambient Air Quality Standards.

C. Technical Review of Control Technologies

Current controls were described above (Section II.A.8). Two additional control technologies appear to be equally effective at controlling fugitive dust, and use less water.

1. Water Misting Systems

Figure II-6: Fugitive Dust Control with Portable, Adjustable Water Mist

Water and dust suppressants have been used to control fugitive dust. Water sprays are most effective when wetting a stockpile or an unpaved road to prevent fugitive dust. Water sprays are generally not effective when used to wet and control a fugitive dust plume that has already formed from wind erosion, truck traffic, or some active operation that generates dust. Water fog and water mist systems are much more effective at wetting dust particles and use less water. Well-designed water fog / mist systems generate small water droplets that are about the same size (10 – 50 microns) as the dust particles. Water droplets that are roughly the same size as the dust particles are far more effective at controlling dust plumes.

2. Wind Screens

Figure II-7: Fugitive Dust Control with Wind Screen

Windscreens are very effective at reducing wind velocity, and significantly reduce wind erosion. To be most effective, wind screens are typically as tall as any operation or stockpile they are designed to protect, and will reduce wind effect for a distance of eight to ten times the height of the wind screen downwind. As an example, a ten-foot-tall stockpile would need a ten-foot-tall windscreen, and the wind screen would protect the stockpile up to 80 – 100 feet downwind from the wind screen. Windscreens are typically constructed with up to 50 percent porosity (i.e. the screen has about 50 percent open area to allow 50 percent of the wind to blow through the screen). This reduces the velocity of the wind on the stockpile by 50 percent, and reduce wind erosion by more than 70 percent.

III. PROPOSED AMENDMENTS

Air District staff proposes new Regulation 6: Common Definitions and Test Methods to provide the over-arching definitions and test methods for current PM rules and any potential future source-specific rules. Proposed new Regulation 6 would address two broad categories:

- Definitions that apply to more than one rule.
- Test methods that apply to more than one rule.

This new regulation is intended to provide the foundation upon which existing regulations exist and new source specific rules can be developed.

A. Common Definitions

The definitions in Regulation 6 are those that are used in more than one PM rule. The intent is to provide the definition in one place where any future amendments to the definition can be made.

There are many forms of PM, so as specific rules focus on PM_{10}, $PM_{2.5}$, condensable PM, or PM precursors, the common definitions can be found in a single location.

B. Administrative Requirements

The general provisions in proposed new Regulation 6 are an expectation of monitoring and corrective actions needed to be in compliance with the standards, an emergency exemption, and monitoring and record keeping requirements.

Section 6-102 requires that each person responsible for PM emissions must provide and maintain a means to observe or monitor their operations. This provision is based on Air District experience where a facility may have been exceeding PM emissions limits, and claimed a defense of not being aware of the excessive emissions. Each owner / operator must establish a management system that monitors and holds itself accountable to meet the various requirements and emissions limits (confirming no visible emissions, or no change in visible emissions), or actions such as monitoring trackout to determine if any corrective actions are needed.

The visible emissions limits are typically based on opacity (or equivalent number on the Ringelmann Chart) using EPA Method 9 or related test methods as the assessment method. Since most facilities do not have a person certified to assess opacity using EPA Method 9, these facilities may simply monitor any visible emissions to determine whether the emissions are visible or not, and if the appearance of the emissions (size, shape, or degree to which it obscures the observer's view) changes. While monitoring is not expected to be a certified assessment of visible emissions, the observation should be done with the sun positioned behind the observer to give the most valid perspective, as required in EPA Method 9. Any significant change in visible emissions represents an early indication that corrective actions may be needed.

Section 6-110 provides a general exemption for agricultural sources, as described in Regulation 1-110.9.

C. Test Methods

The test methods listed in Regulation 6 are those that are used in more than one PM rule. The intent is to provide a single location for listing all associated test methods, where any future amendments to the listing can be made. In addition, as other forms of PM are regulated, the specific test methods for PM_{10}, $PM_{2.5}$, condensable PM, or PM precursors can be added.

Sampling, instrumentation and assessment of visible emissions / opacity are based on specific procedures cited in the Manual of Procedures. Assessment of opacity is conducted in accordance with Modified EPA Method 9 or equivalent as provided by the Manual of Procedures, Volume, 1, Part 1.

D. Comparative Analysis

Regulation 6 is a foundational regulation that provides the common definitions and test methods for other Regulation 6 rules that address PM emissions. As such, there are no direct comparison regulations that need to be addressed, or comparisons of emission limits that need to be made.

IV. EMISSIONS and EMISSIONS REDUCTIONS

This section of the Staff Report summarizes the emission reduction benefits that would result from the proposed regulation and the costs involved. Proposed new Reg. 6 is a foundational regulation,

to provide the basis for future industry and source specific future regulations. As a result, no emissions reductions are expected from implementation of this regulation.

A. Emission Reductions Expected

No emission reductions are expected from proposed new Regulation 6.

V. ECONOMIC IMPACTS

Economic impacts are assessed by the cost effectiveness of proposed proposed emission controls, and a socioeconomic assessment of affected industries.

Regulation 6 is a foundational regulation for the existing PM rules, and any new source specific rules that may be developed in the future. No controls are required under proposed new Reg. 6, so no costs are incurred. Future administrative costs are expected to be reduced with definitions and test methods located in one regulation, rather than being repeated.

A. Socioeconomic Impacts

Review of Potential Economic and Job Impacts with a Socioeconomic Analysis

The Air District contracts with an independent consultant to conduct a Socioeconomic Analysis of potential economic impacts from the definitions and test methods in new Regulation 6, and the associated proposed amendments to Rule 6-1. The consultant has made an initial assessment of any economic impacts based on the new Regulation 6 and proposed amendments to Rule 6-1, and this staff report. The Socioeconomic Impact Analysis is included as Appendix A.

Independent Socioeconomic Analyses will be made on any proposed new source specific rules. The economic impacts on different industries differ, so will be analyzed separately. There may be overlap between the bulk material storage and handling requirements in the amendments to Rule 6-1, and new Rule 6-6: Prohibition of Trackout so those economic impacts may be evaluated together.

This final proposed rule language and staff report have been used to complete the Socioeconomic Analysis. The Socioeconomic Analysis will be included in the final regulatory package, posted for public review and comment at least 30 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposal, and public input before taking any action on the new Regulation 6 and amendments to Rule 6-1.

B. District Impacts

Staff anticipates improved efficiency in administering PM rules with the clarifications made in proposed Regulation 6, and the proposed amendments made to Regulation 6, Rule 1: General Requirements. The Manual of Procedures, Evaluation of Visible Emissions has been amended to incorporate the Cumulative Time method, and the Time Averaged method of assessing opacity from Type B emission points.

Compliance test requirements are now explicit, and testing frequency is defined based on PM emissions rates. Compliance & Enforcement staff and Source Test staff may have to review more source test information as this information comes into the Air District, but the incremental time required is not significant.

VI. REGULATORY IMPACTS

A regulatory impact analysis is required by H&SC Section 40727.2. This analysis compares the proposal to other Air District, State and federal rules addressing the same sources. The following table provides this regulatory impact analysis.

Regulation 6 H&SC Section 40727.2 Regulatory Analysis

Section	**Description** (paraphrased)	Comparable State or Air District Provision	Comparable Federal Provision	Discussion
6-101	Description / Purpose	No equivalent requirements	No equivalent requirements	Foundational document – applies to all Regulation 6 source specific rules
6-102	Expectation of Compliance	Various monitoring requirements	Various monitoring requirements	Establish expectation to monitor operations in a manner sufficient to prevent violations
6-200	Definitions	Consistent with SCAQMD Rule 102, SJVUAPCD Rule 1020	Consistent with EPA Source Test Methods 5, 9, 201a, 202, 203a,b,c	Provide consistency for all Regulation 6 rules
6-300	Standards	None	None	Foundational document
6-400	Administrative Requirements	Consistent with SCAQMD Rule 403, SJVUAPCD Rule 1020	No specific monitoring requirements	Emissions monitoring to ensure compliance with emission or limitation requirements
6-500	Monitoring and Records	Consistent with Regulation 1		Refers to Regulation 1 monitoring and records requirements
6-600	Manual of Procedures	Consistent with EPA Source Test Methods 5, 9, 22, 201a, 202, 203a,b,c	Consistent with EPA Source Test Methods 5, 9, 22, 201a, 202, 203a,b,c	Clarification of test methods needed for each sub-set of particulate matter

A complete listing of the applicable federal standards is found in Attachment 1-4.

VII. ENVIRONMENTAL IMPACTS

Review of Potential Environmental Impacts Under CEQA

The Air District contracts with an independent consultant to conduct a California Environmental Quality Act (CEQA) analysis of potential environmental impacts of the new Regulation 6, and proposed amendments to Rule 6-1. The consultant has conducted an initial assessment of any environmental impacts based on the new Regulation 6, the proposed amendments to Rule 6-1, and this staff report.

Similarly, CEQA analyses have been conducted on the other new source specific proposed rules. The CEQA analysis, attached as Appendix B, combines the analysis to review all impacts of the proposed new Regulation 6, proposed amendments to Rule 6-1, and the proposed new Rule 6-6 together all as one project, so that the cumulative impact of these proposals can be assessed and considered.

The combined CEQA analysis shows that no significant environmental impacts are expected, and a Negative Declaration has been prepared. The CEQA Negative Declaration will be included in the final proposal, posted for public review and comment at least 30 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposals, and public input before taking any action on the new Regulation 6 and amendments to Rule 6-1, and before acting on new Rule 6-6: Prohibition of Trackout.

VIII. RULE DEVELOPMENT / PUBLIC PARTICIPATION PROCESS

Rule Development Process

The Air District's 2010 Clean Air Plan addressed PM, including PM's significant health impacts, and was approved on September 15, 2010. The 2010 Clean Air Plan included Stationary Source Measure SSM 6: General Particulate Matter Emission Limitation. In addition to developing amendments to Rule 6-1 to satisfy SSM 6, staff started work on this regulatory project in April 2010 by reviewing the entire inventory of PM emissions; and identifying source categories where PM (particularly $PM_{2.5}$) emissions are significant, where the Air District has authority, and where the potential for substantial PM reductions are available.

The proposed amendments to Rule 6-1 are part of a rule-making process that began with the 2010 Clean Air Plan, and addresses a commitment by the Air District's Board of Directors to review Regulation 6, Rule 1, identified as Stationary Source Measure SS31 in the Air District's 2017 Clean Air Plan. Proposed new Regulation 6 and propsoed amendments to Regulation 6, Rule 1 begin to fulfill these important commitments to reduce PM emissions and improve public health.

Staff based the proposed amendments to Rule 6-1 on the 2011 emissions inventory. Staff identified the source categories to be considered during development of potential amendments, and identified the largest sources in each category. Staff selected 55 of the largest permitted stationary sources, and visited each one to better understand each facility's business, each unique emissions source and discuss potential control techniques available to reduce PM emissions. In addition, concerns about the lack of information regarding particle size distribution, possible sources of condensable PM, and potential secondary PM formation were discussed.

Staff visited eight facilities that store and handle petroleum coke and coal to ensure the unique issues with these solids were incorporated into the rule development process. Staff used the information from these visits to develop the draft amendments and two source specific rules, and to estimate the emission reductions that could be achieved by implementing these draft rule changes.

Staff conducted eight workshops throughout the Bay Area from January 30 – February 8, 2017. These workshops were conducted in parallel with Open House forums for the 2017 Clean Air Plan. Many stakeholders voiced concern that the PM workshops were diminished by being scheduled with the Clean Air Plan Open Houses, and the combined Open House / workshop format prevented staff from making a formal presentation of the preliminary drafts of each rule or engage in direct questions / answers. Others felt the personal interaction with staff regarding the preliminary drafts of each rule provided better opportunity for genuine discussion, including questions / answers.

Comments received after the workshops provided additional input regarding the process used for outreach to the wide variety of affected parties. Many indicated that they had not heard about the workshops at all, or only at the last minute. The Public Outreach and Consultation process described below in Section B was not as effective as staff would have preferred, so staff will mail Public Hearing notices to each Air District permitted facility with any significant PM emissions, and mail Public Hearing notices to additional facilities with similar Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) codes from a business database used by the Socioeconomic Analysis contractor called InfoUSA, including bulk material storage and handling and construction companies.

Proposed new Regulation 6 will provide the foundational regulation for current PM rules, and potential future source specific rules. Proposed new Regulation 6 rule language, and this accompanying staff report are the next step in the rule development process. Staff anticipates that proposed new Regulation 6, and proposed amendments to Rule 6-1 will be considered together at a Public Hearing. One other proposed new source specific rule, Rule 6-6, and associated staff report may also be considered at that Public Hearing.

The CEQA Analysis has been conducted with the proposed new Regulation 6, propose amendments to Rule 6-1, and the other proposed new source specific rule all considered one project, so that the cumulative impact of these proposals can be considered. The socioeconomic analysis for each project were conducted separately.

B. Public Outreach and Consultation

In analyzing the inventory of PM emissions and source categories where PM (particularly $PM_{2.5}$) emissions are significant, where the Air District has authority, and the potential for substantial PM reductions, staff consulted with the following interested and affected parties:

Businesses	Governmental Agencies
Morton Salt - Newark	CALTRANS District 4 - Oakland
Cargill – Newark	Bay Area Regional Water Quality Board - Oakland
Criterion Catalysts - Pittsburg	North Coast Regional Water Quality Board – Santa Rosa

CertainTeed Gypsum – Napa	Bay Area Rapid Transit – Richmond Maintenance Yard
Maxwell House – San Leandro	Alameda County
C & H Sugar – Crockett	Contra Costa County
Con Agra – Oakland	Marin County
CEMEX – Oakland	Napa County
CEMEX – Clayton	Santa Clara County
Strategic Materials – San Leandro	San Francisco City & County
Dutra Materials – San Rafael	San Mateo County
Superior Supplies – Santa Rosa	Solano County
Granite Rock – Redwood City	Sonoma County
Hanson Aggregates – Clayton	Contra Costa County Sanitary District
Bodean / Mark West Quarry – Santa Rosa	City of Hayward
PABCO Gypsum – Redwood City	City of Napa
Georgia Pacific Gypsum - Antioch	City of Oakland
Syar - Napa	City of San Jose
Syar – Santa Rosa	City of San Rafael
Syar - Vallejo	City of Santa Rosa
Soiland Quarry - Cotati	
Langley Hill Quarry - Woodside	**Industry Associations**
Granite Construction – Santa Clara	Association of Building Contractors
Granite Construction – San Jose	Associated Roofing Contractors of the Bay Area Counties
Willowbrook Feeds – Petaluma	California Asphalt Pavement Association
Hunt & Behrens – Petaluma	Construction Industry Air Quality Coalition
Owens-Corning – Santa Clara	Northern California Engineering Contractors
Owens-Brockway - Oakland	
Waste Management – San Leandro	
Zanker Road Material Processing – San Jose	
Waste Management - Altamont	
Redwood Landfill	
Guadalupe Landfill	
Ox Mountain Landfill – Half Moon Bay	
Clover Flat / Upper Valley Resources	
Potrero Hills Landfill	
Stavin	
McGuire & Hester Construction - Oakland	
Ghilotti Bros. Construction – San Rafael	
Universal Building Services - Richmond	
Statewide Sweeping – Milpitas	
Levin Richmond Terminal	
Lehigh Cement	
Phillips 66 Coker	
Phillips 66 Coke Calciner	
Shell Coker	
Tesoro Coker	

Valero Fluid Coker	
APS West	
Carbon Inc.	

These discussions led to a review of the Storm Water Pollution Prevention Plan (SWPPP) Best Management Practices, and the suggestion that any proposed requirements should be consistent with SWPPP requirements.

As described above, feedback indicates that outreach could have been more comprehensive. Public Hearing notices will be mailed to all District permitted facilities with significant PM emissions, and to all entities with similar Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) codes from a business database used by the Socioeconomic Analysis contractor called InfoUSA, including construction firms.

Public Hearings are the next step in the rulemaking process. Air District staff will publish the Public Hearing package for new Regulation 6: Common Definitions and Source Test Methods; and proposed amendments to Regulation 6, Rule 1: General Requirements. Air District staff will accept written comments, will respond to all comments received and will present final proposals to the Air District's Board of Directors for their consideration. Response to comments is included as Appendix A of this staff report.

IX. CONCLUSION / RECOMMENDATIONS

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. This section addresses each of these findings.

A. Necessity

"'Necessity' means that a need exists for the regulation, or for its amendment or repeal, as demonstrated by the record of the rulemaking authority." H&SC section 40727(b)(1).

Proposed new Regulation 6: Particulate Matter–Common Definitions and Source Test Methods is needed to provide a foundational regulation with definitions and test methods that are common to one or more source specific regulations. Amendments to Regulation 6, Rule 1: General Requirements are needed to update emission limits that have not been reviewed for more than 20 years, and to clarify compliance testing requirements and test methods. The update to emissions limits are needed because the Bay Area is not yet in attainment for either PM_{10} or $PM_{2.5}$ California Ambient Air Quality Standards.

B. Authority

"'Authority' means that a provision of law or of a state or federal regulation permits or requires the regional agency to adopt, amend, or repeal the regulation. H&SC section 40727(b)(2)."

The Air District has the authority to adopt this rule under Sections 40000, 40001, 40702, and 40725 through 40728.5 of the California Health and Safety Code.

C. Clarity

"'Clarity' means that the regulation is written or displayed so that its meaning can be easily understood by the persons directly affected by it." H&SC Section 40727(b)(3)

Proposed Regulation 6 is written so that its meaning can be easily understood by the persons directly affected by them. Further details in the staff report clarify the proposals, delineate the affected industry, compliance options, and administrative requirements for the industries subject to this rule.

D. Consistency

"'Consistency' means that the regulation is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations." H&SC Section 40727(b)(4)

The proposed new rule is consistent with other Air District rules and not in conflict with state or federal law.

E. Non-Duplication

"'Nonduplication' means that a regulation does not impose the same requirements as an existing state or federal regulation unless a district finds that the requirements are necessary or proper to execute the powers and duties granted to, and imposed upon, a district." H&SC Section 40727(b)(5)

Regulation 6 is non-duplicative of other statutes, rules or regulations.

F. Reference

"'Reference' means the statute, court decision, or other provision of law that the district implements, interprets, or makes specific by adopting, amending, or repealing a regulation." H&SC Section 40727(b)(6)

Implementing, interpreting or making specific the provisions of the California H&SC Sections 40000, 40001, 40702 and 40727.

The proposed rule has met all legal noticing requirements, have been discussed with the regulated community and other interested parties, and reflect consideration of the input and comments of many affected and interested stakeholders.

G. Recommendations

Air District staff recommends adoption of proposed Regulation 6: Common Definitions and Source Test Methods; and amendments to Regulation 6, Rule 1: General Requirements, and approval of the CEQA Negative Declaration.

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30. 2009-0009-DWQ Construction general permit *(effective July 1, 2010)*
31. California Storm Water Quality Association, Storm water Best Management Practice Handbook Portal: Construction

APPENDICES

A. Comments and Responses
B. Socioeconomic Analysis
C. CEQA Analysis

Attachment 1: Background Research on Bay Area PM Emissions

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

STAFF REPORT – PARTICULATE MATTER

Proposed Amendments to Regulation 6, Rule 1: General Requirements

2017 Clean Air Plan, Control Measure SS31

Guy A. Gimlen
Principal Air Quality Engineer
June 2018

ACKNOWLEDGEMENTS

Air District staff members who contributed significantly to the development of this report and proposal:

Alexander Crockett, Esq., Assistant Counsel, Legal
Wayne Kino, Deputy Air Pollution Control Officer
Don VanBuren, Senior Air Quality Engineer, Compliance & Enforcement
Ed Giacometti, Air Program Supervisor, Compliance & Enforcement
Jeff Gove, Director, Compliance & Enforcement
Paul Hibser, Air Program Supervisor, Compliance & Enforcement
Ron Carey, Senior Inspector, Compliance & Enforcement
Greg Solomon, Supervisor, Engineering
Brian Lusher, Senior Air Quality Engineer, Engineering
Jerry Bovee, Manager, Meteorology and Measurement
Chuck McClure, Air Program Supervisor, Meteorology and Measurement
Tim Underwood, Principal Air Quality Engineer, Meteorology and Measurement
Brad Kino, Senior Air Quality Engineer, Meteorology and Measurement
Luz Gomez, Manager, Community Engagement
David Ralston, Manager, Communications
Azibuike Abaka, Public Information Officer II, Community Engagement
Kristen Law, Staff Specialist I, Communications
Rosene Salmo, Staff Specialist I, Communications
Aneesh Rana, Public Information Officer II, Community Engagement

STAFF REPORT

Regulation 6, Rule 1: General Requirements

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I. EXECUTIVE SUMMARY

The Bay Area Air Quality Management District (Air District) staff is proposing amendments to Regulation 6, Rule 1: General Requirements (Rule 6-1), the Air District's general particulate matter emissions limitation rule. This Staff Report has been developed to provide the information supporting the proposed amendments to Rule 6-1 and is intended to provide the public with information on draft amendments to Rule 6-1 in advance of Public Hearing the Air District will hold in Spring 2018.

The Air District is also proposing a new over-arching regulation for Particulate Matter, Regulation 6: Common Definitions and Test Methods (Reg 6) to accompany revisions to Rule 6-1. The new proposed Regulation 6 would provide common definitions and test methods that apply to existing Regulation 6 rules and other source-specific particulate matter rules as they are developed in the future.

The proposed amendments to Rule 6-1 are part of a rule-making process to fulfill a commitment by the Air District's Board of Directors to review Regulation 6, Rule 1, identified as Stationary Source Measure SS31 in the Air District's 2017 Clean Air Plan. Since the 2010 Clean Air Plan originally identified amending Rule 6-1 as a Stationary Source Control Measure, Air District staff further committed to taking steps to address the Bay Area's particulate matter challenges in a November 2012 report entitled *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area*. These draft amendments to Regulation 6, Rule 1 begin to fulfill these important commitments to reduce particulate matter emissions and improve public health.

Staff proposes amendments to Rule 6-1 because the amendments are needed to ensure the Bay Area standards are as health-protective as possible; other air districts in California have more stringent particulate matter standards; and the Air District's general requirement particulate standards have not been updated in decades. Control technology is available that facilities can use to comply at a reasonable cost. Staff found no facilities with PM emissions quantified by source test that are affected by the amendments to Rule 6-1. As mid-sized and smaller particulate matter sources begin to conduct source tests, some may find a need to install controls. However, most of these sources currently have more stringent permit limits than those being proposed. Staff estimates no emission reductions from these sources.

In the workshop phase of this rule development effort, Air District staff drafted a new regulation to control particulate matter, Regulation 6, Particulate Matter, Rule 8: Bulk Material Storage and Handling (Rule 6-8). Draft new Rule 6-8 would focus on fugitive dust from bulk material storage and handling operations, a large source of particulate matter and a moderate source of fine particulates ($PM_{2.5}$). Fugitive dust is dust that is generated from active operations such as vehicle traffic, loading and unloading solid materials; grinding, screening, or transporting solids using conveyors; and wind erosion on solids during storage and/or handling operations.

Rather than continue to the separate development of draft new Rule 6-8, staff recognized that fugitive dust control requirements from bulk material storage and handling facilities best fits within general requirements, and has incorporated these requirements into the proposed amendments to Rule 6-1. The new section proposed for Rule 6-1 addresses fugitive dust from active operations and from wind erosion of storage piles, disturbed surfaces, and any other activities where the solids can be exposed to the wind by setting limits on any allowable fugitive dust plume, and by prohibiting any visible emissions of fugitive dust from traveling or carrying beyond the site property. In addition, significant bulk material spills must be cleaned up so they do not become a source of fugitive dust. Bulk materials include coke and coal storage and handling. Coke and coal are particularly troublesome solids because the dust from these products is black, visible, and particularly annoying if any particles fall onto adjoining property.

This proposed new section of Rule 6-1 will affect approximately 120 facilities that store and handle bulk materials, ten of which handle petroleum coke, and three facilities that store and handle coal. Approximately 40 of these facilities already have controls for fugitive dust, mostly water sprays. Wind breaks are a very effective method to control wind erosion that initiates fugitive dust plumes, particularly when bulk materials are actively conveyed from one place to another. Costs for wind screens and improvements to watering systems are relatively minor. Emission reductions are estimated to be 0.37 tons per day (tpd) of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), with approximately 0.03 tpd of emissions being $PM_{2.5}$. Complaints from neighbors are expected to be reduced significantly. The new rule would reduce emissions of particulate matter in the Bay Area in a technically feasible and cost-effective manner, thereby improving public health and reducing nuisance dust deposited on nearby neighbors' property.

The Air District is proposing these amendments to Rule 6-1 as part of three proposals addressing fine particulate pollution. The three proposals include (i) a new Regulation 6 providing common definitions, expectation of monitoring emissions to remain in compliance, and test methods that apply generally to all of the particulate matter Rules under Regulation 6; (ii) amendments to Rule 6-1; and (iii) a new Rule 6-6: Prohibition of Trackout. More information about these related proposals can be found in their respective staff reports, which are being published concurrently with this report.

This Staff Report describes the review that staff has undertaken to analyze the various source categories addressed by Rule 6-1 and determine any significant emission reductions. Following this introduction and summary, Section II, Background refers to the parallel section in the Regulation 6 staff report supplemented with additional information regarding bulk material storage and handling. Section III, Proposed Requirements describes the specific requirements and emission limits, and rationale supporting each. Section IV, Emissions and Emission Reductions describes the expected emissions impacts. Section V provides estimated costs for implementation of Rule 6-1; assesses cost effectiveness of the emission reductions; summarizes the Socioeconomic Impacts on the affected industries, jobs market, and local economy; and covers the implementation impacts for the Air District. Section VI provides a discussion on how this rule fits into the existing structure of state and federal regulatory requirements. Section VII summarizes the environmental impacts, and references the California Environmental Quality Act analysis conducted for the amendments to Rule 6-1, in combination with new Regulation 6, and new Regulation 6, Rule 6: Prohibition of Trackout. A Negative Declaration is proposed as a result of the CEQA review. Section VIII describes the rule development and public participation process used to ensure all affected and interested parties participated in this rulemaking project. Section IX summarizes the findings required by the California Health and Safety Code to adopt an amended regulation, summarizes the staff conclusions, and lists the staff recommendations to the Board regarding Rule 6-1, and the Negative Declaration from the CEQA analysis. References are provided, and the associated CEQA Analysis, Socio-economic Analysis and Response to Comments are appendices to this staff report.

Staff recommends the Board of Directors adopt the proposed amendments to Regulation 6, Rule 1, and approve the associated CEQA Analysis Negative Declaration at the Public Hearing scheduled for Spring 2018.

The Air District invites all interested members of the public to review the proposed amendments to Rule 6-1 and this Staff Report, to provide comments on this proposal, and to participate in the Public Hearing. Air District staff will accept written comments, will respond to all comments received, and will present final proposals to the Air District's Board of Directors for their consideration. For further information in advance of the Public Hearing, please contact Guy Gimlen, Principal Air Quality Engineer, (415) 749-4734, ggimlen@baagmd.gov.

II. BACKGROUND

Refer to the Background section of the staff report for new proposed Regulation 6, Section A for the broad review of all particulate matter sources in the Bay Area, including bulk material storage and handling. This background information provided the basis for the amendments to Rule 6-1, and discusses the recognition that most sources currently have more restrictive permit limits, so the more restrictive particulate matter standards result in very few if any emission reductions. That review also lead directly to the new section of Rule 6-1 addressing control of fugitive dust from bulk materials, including petroleum coke and coal storage and handling. Supplemental background information on petroleum coke and coal storage and handling is included here.

A. Industry / Source Description

There is potential for fugitive dust being emitted from any location that produces, handles or stores solid material, particularly where heavy truck and vehicle traffic are part of producing and selling these bulk materials. Bulk material is defined as any unpackaged sand, soil, gravel, aggregate, solid construction material, solid industrial chemical or other solid product less than two inches in length or diameter. Petroleum coke and coal handling facilities are included with bulk material sites.

1. Bulk Material Storage and Handling

Wind erosion at bulk material storage and handling facilities can create significant dust emissions, particularly when handling fine solids like gypsum, or even gravel and sand from rock quarries. Background on bulk material storage and handling is found in the Regulation 6 staff report, Section II.A.7: Opportunities for PM Emission Reductions. In addition, the Air District has received numerous complaints about coke dust and coal dust. Coke and coal loading / unloading and stockpiles are unique in that fugitive dust from these products is black and highly visible other more typical forms of dust.

PM Emissions from Petroleum Coke and Coal

Petroleum coke is a product of the oil refining process, converting residuum (the heavy asphaltic material from crude oil) into lighter gas oils and solid coke. Three of the five Bay Area refineries produce solid coke. The solid coke is formed in a large vessel called a coke drum, and removed from the drum with high pressure water. The solid coke usually falls into a pit, where it is scooped up, crushed to a manageable size, and conveyed to storage on a conveyor belt. Each refinery conveys, loads, and stores coke in stockpiles (either on-site or off-site). The solid coke may be loaded directly onto a truck and transported to a customer. Most petroleum coke is burned for fuel. One refiner also calcines a portion of their coke to produce a specialty product called calcined coke. One other refiner produces “fluid” coke, which has the consistency of black sand.

One cement manufacturer in Cupertino burns petroleum coke as fuel. Coke is transported to this facility by truck, offloaded via conveyor to a storage pile, and then fed into the process stream. Most of the coke produced in the Bay Area is shipped overseas. There are three coke shipping facilities, one located in the Richmond harbor, one in Pittsburg, and one in Benicia. Each of these shipping facilities receives solid coke by truck, off-loads it, conveys and stores it, then loads it onto ships. The facility in Richmond stores the coke in an open stockpile. The facility in Pittsburg is a state of the art facility, with enclosed off-loading, enclosed conveyors, and enclosed storage. The facility in Benicia is partially enclosed and handles fluid coke.

The Bay Area has two foundries that use coal as a raw material in the manufacturing process. One is in Oakland and the other is in Union City. Coal is received from out of state by railcar at each facility. One facility off-loads and conveys the coal to open storage, then scoops up coal as

needed to supply the manufacturing process. The other off-loads and conveys the coal to a series of silos where the coal is stored until used in the manufacturing process.

Coal dust is a concern throughout the transportation and handling process. Coal contains 2-5 wt. % silt (particles smaller than 70 microns), and the silt can create dust from wind erosion if not kept moist. Coal dust can be emitted from the open tops on railcars in transit. Additional silt is formed as coal jostles in the railcar but most of the coal dust silt is emitted from the railcar in the first few miles of travel. The Air District does not have authority to regulate rail transportation.

In addition, coal dust is a concern when off-loading the railcar into a hopper and conveyor system. Staff observed coal dust coming out of the top of the railcar during unloading, and coal dust surrounding the receipt hopper below the railcar. In addition, the facility that scoops up the coal to feed into the manufacturing processes had issues with coal spills into the vehicle path used to deliver the coal to the process equipment.

2. Pollutants and Emissions Sources

The pollutants of concern from bulk material sites are fugitive dust from the any of the solid materials being handled and stored, and any dust from vehicle traffic on unpaved roads within the site. Rock quarries, asphalt plants, construction sites, equipment storage yards that are not paved, landfills, and any industrial facility that handles solids has the potential to create dust that can add to the particulate load in the air, and that can impact neighbors.

3. Current Emissions Control Technology and Methods

As described in Background section of the staff report for new draft Regulation 6, Section A, the conventional controls for fugitive dust from bulk material storage sites include water trucks spraying water on stockpiles and roads, covers for stockpiles, limiting vehicles speeds on internal haul roads, water sprays for crushers, screens and conveyor belts, and cleanup of any spills.

B. Regulatory History

Refer to the Background section of the staff report for new draft Regulation 6, Section B for the broad review of Regulatory History.

C. Technical Review of Control Technologies

Refer to the Background section of the staff report for new draft Regulation 6, Section C for the broad review of control technologies. There are no new innovative technologies used for controlling fugitive dust from bulk material sites, but there are control technologies that are very effective that are currently under-utilized and can impact dust generation significantly. Wind screens are very effective, often more effective than using water to control dust. Staff strongly encourages use of wind screens rather than watering to control dust, particularly with the semi-constant drought that persists throughout California.

1. Wind Screens are Effective Dust Controls

Prevention of wind erosion for bulk materials, including coke and coal, is very similar to that needed for geologic fugitive dust:

- Minimize the surface area being exposed to wind erosion;
- Establish windbreaks, and limit work on windy days;
- Apply dust suppression measures including water fog or mist when needed;
- Limit traffic on surfaces with dusty silt, and limit vehicle speeds; and

- Prevent dirt, mud, and solids spills; and clean up any spills that have the potential to create dust immediately.

Staff observed the following areas of opportunity for better bulk material dust control:

- Protect locations where bulk materials are handled from wind erosion:
    - Unloading from a railcar or truck into a hopper that feeds a conveyor;
    - Unloading from a ship (this is seldom done, but uses a clamshell style scoop when it is done);
    - Conveyors are often up in the air and more susceptible to winds;
    - Conveyor transfer points (the transitions from the end of one conveyor onto another conveyor, or crusher or screening device);
    - Stockpiles; and
    - Loading onto trucks, railcars and ships.
- Reduce drop heights at conveyor transfer points, and drop heights onto stockpiles where the material is exposed to the wind;
- Prevent and cleanup spills that are subject to wind erosion; and
- Prevent bulk materials from migrating into vehicle traffic areas where it can be pulverized into silt, and entrained into the air from the turbulence of the vehicle traffic.

Staff visited most bulk material handling sites, and found each site (except the petroleum coke shipping facility in Pittsburg) needed improvements in a least two of the areas listed above.

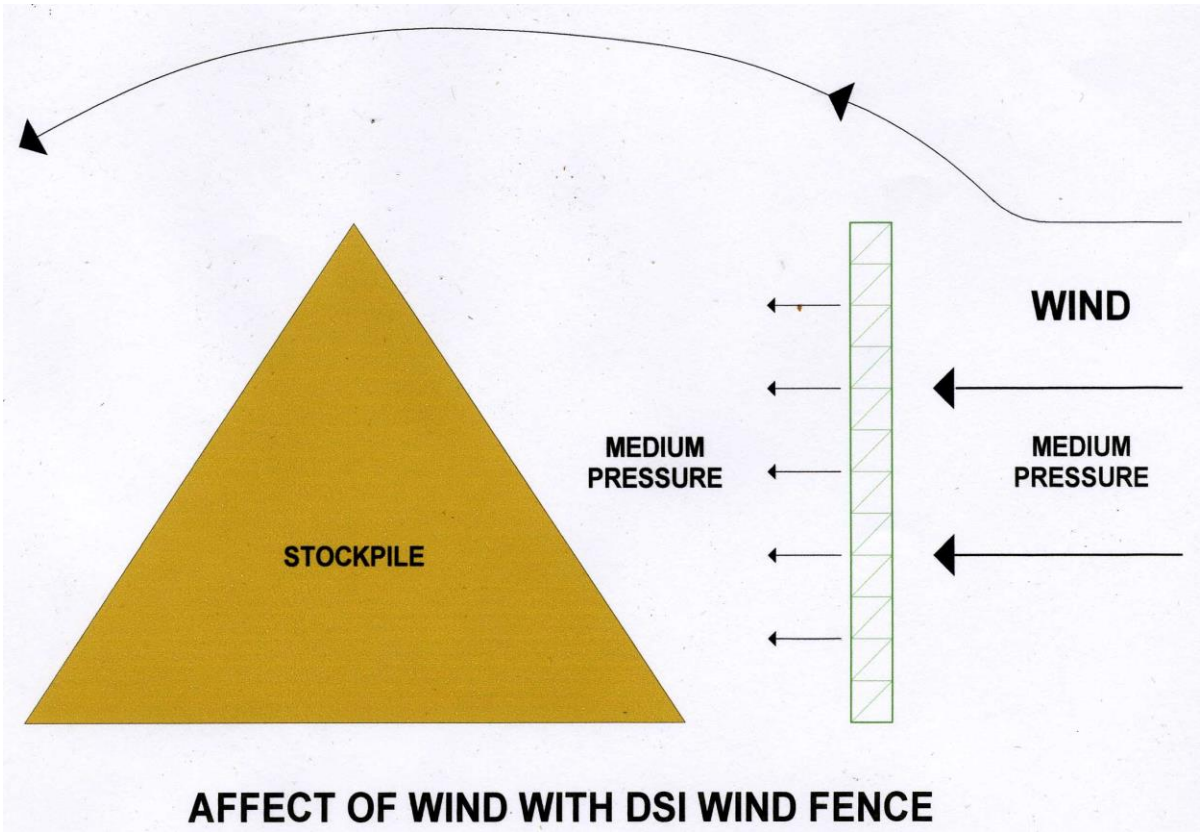
Figure II-1: Typical Wind Screen - constructed to protect a down-wind stockpile.

Wind barriers are very effective at reducing wind velocity and controlling wind erosion. Research on wind barrier design finds that the most effective designs[1] have 50 percent porosity (i.e. allows about half of the wind to blow through the wind screen), and the height of the windbreak should

[1] Windbreak Effectiveness for Storage-Pile Fugitive-Dust Control, Billman and Ayra, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University.

be as high as the bulk material handling operation or stockpile that it protects. The windbreak should be placed a distance no more than its height upwind from the potential dust source. Wind screens are estimated to be 70 percent effective at reducing fugitive dust. Figure II-2 shows the impact a wind barrier has on wind velocity. This example is provided by Dust Solutions, Inc., a company that provides a wide variety of dust solutions, including water misters and wind barriers. Wind screens with porosity allow enough wind to blow through the screen preventing a low-pressure area on the downwind side that can create eddy currents the aggravate wind erosion.

Figure II-2: Wind Barrier – from Dust Solutions, Inc.



Dust controls are similar during active dust generating operations. Dust control measures for active bulk material handling include:

- Provide wind barriers to prevent / minimize wind erosion, or enclose dusty material handling and storage areas.

Figure II-3: Wind Barrier surrounding a transfer point

Windbreaks on conveyors can be built or attached to the support structure for the conveyor, with adequate clean-out openings to accommodate conveyor spills. Conveyors may also need catch-pans to catch any small spills from conveyor operation. These catch-pans, however, are often difficult to retrofit onto an existing conveyor because the mechanical structure must be designed for the weight of the catch-pan plus any spills that may collect. Staff is not proposing to require catch-pans on conveyors because of this retrofit problem.

Fugitive dust from wind erosion is estimated based on wind speed above what is known as "the friction threshold velocity" (the wind speed required to get the first particle of fugitive dust into the air). Use of a wind screen reduces wind velocity by 50%. Average wind speed in the Bay Area during the dry summer season is typically about 10 mph with peak wind speed seldom over 20 mph, so wind screens can be up to 85% effective at controlling fugitive dust. Staff estimates that a combination of windscreens and judicious use of water fog and misting systems can control more than 90% of fugitive dust. However, since about one-third of bulk material handling facilities already use some combination of wind screens and water sprays, staff estimates that enhanced effort to control dust, particularly using wind screens, will be approximately 70% effective.

2. Judicious Water Use to Control Dust

In addition to wind screens, judicious use of water is the next most effective way to control dust. Water sprays and dust suppressants continue to be the most effective way to control dust from stockpiles and unpaved, unstabilized haul roads. Covers for stockpiles, and a low-silt gravel base for unpaved haul roads are effective and reduce water use.

In situations where active operations occur and fugitive dust is being generated, water fog and water mist are more effective at reducing dust. Rather than spraying significant volumes of water, fog and mist systems create small water droplets that are more effective at contacting small dust

particles. Most estimates of water fog and water mist systems indicate they are 10 – 20 times more effective at reducing fugitive dust per gallon of water. During this recurring drought in California, staff recommends water fog or mist systems, and recommends converting existing water spray systems to water fog/mist systems. These water fog systems can also be even more effective when a surfactant (typically a soap) is used to help the water contact and adhere to the solid particles of dust more easily.

Figure II-4: Use water fog or mist to control dust during active handling operations.

Figure II-5: Spray water fog and mist to keep disturbed surfaces damp during bulk material moving operations.

Staff estimates that water spray systems can control approximately 50 percent of fugitive dust generation, and water fog or water mist systems can be equally effective using less than 25 percent of the water used by water sprays.

Note the obvious concern about excessive use of water to control fugitive dust emissions, especially with the persistent recurring drought being experienced in California. This concern about water use drives the recommendation to use wind screens as a first approach to dust control, and to take advantage of the better effectiveness of water fog and water mist systems, rather than water sprays, water hoses, and water trucks. A complication of water fog and mist systems is that the fog or mist must be protected from the wind by an enclosure or a wind screen, because the fog or mist will be affected by the wind patterns.

3. Vehicle Traffic Controls

At many bulk material sites, vehicle traffic is the largest source of fugitive dust. Staff recommends the following control methods to prevent, and reduce dust from vehicles:

- Limit vehicle traffic to paved or stabilized surfaces;
- Limit vehicle speeds to less than 15 mph;
- Use barricades or barriers to prevent erosion of bulk materials onto the vehicle pathways where vehicles can pulverize the solids into fine particles; and
- Prevent dirt, mud and other solids from being tracked out or spilled onto paved roadways.

Staff has specifically not required these specific controls in the proposed rule language, because it is up to each bulk material site to use the controls that best fit their operations, as needed to prevent significant dust plumes and to prevent any visible dust plumes from being carried beyond the property line where the dust can impact neighbors.

III. PROPOSED AMENDMENTS

A. Purpose

This regulation limits the quantity of PM in the atmosphere by establishing limits on emission rates and concentrations from facilities with stacks and by establishing visible emission limits, including opacity standards for any source, including fugitive dust from bulk material storage and handling facilities.

B. Applicability

This is a general requirements rule, so it would apply to all sources of PM in the Bay Area. In addition, the general provisions in Regulation 1, and the common definitions and source test methods in Regulation 6 also apply to Rule 6-1 as cited in the rule. A proposed new section addresses fugitive dust from bulk material sites.

C. Exemptions

Rule 6-1 provides exemptions for sources that are subject to other source-specific rules addressing those operations. Section 6-1-110.1 exempts temporary sandblasting operations because they are currently subject to the provisions of Regulation 12, Rule 4. Section 6-1-110.2 exempts outdoor fires because they are currently subject to the provisions of Regulation 5. Section 6-1-110.3 exempts wood-burning devices because they are currently subject to the

provisions of Regulation 6, Rule 3. Section 6-1-110.4 exempts metal recycling and shredding operations because they are currently subject to the provisions of Regulation 6, Rule 4.

Section 6-1-111 provides a limited exemption for explosive blasting operations that have been permitted by the State of California Department of Industrial Relations, Division of Occupational Safety and Health (and other applicable local permitting authorities). It is very difficult to control dust during blasting operations. Staff has observed significant pre-watering of a blast site (for approximately 12 hours), yet there was very little impact on the resulting fugitive dust from the blast. This exemption applies to the blasting operations only. The storage and handling of bulk materials remain subject to the requirements of this rule.

Section 6-1-112 provides a limited exemption from new Section 307 regarding fugitive dust from bulk material handling, because Regulation 9-13-304 requires specific fugitive dust mitigation control measures. This section also provides a limited exemption to Section 6-1-310 (particulate matter concentration limits) and Section 6-1-311 (particulate matter weight limits) for Portland Cement manufacturing because these sources are subject to the specific requirements of Regulation 9, Rule 13.

Section 6-1-113 provides a limited exemption from the proposed more stringent amendments to Section 6-1-310 (particulate matter concentration limits), the proposed more stringent amendments to Section 6-1-311 (particulate matter weight limits), and from compliance testing required in Section 6-1-504 for commercial cooking, because these sources are subject to the provisions of Regulation 6, Rule 2. Similarly, salt processing operations are proposed to be exempt because pure (greater than 99 weight percent) salt air emissions to not have health consequences. Material Safety Data Sheet (MSDS) for salt cites no specific health impact limits.[2]

Staff considered a similar exemption for sugar processing operations, but found that the National Institute for Occupational Safety and Health (NIOSH) recommends no more than 5 mg/m^3 of exposure to sugar dust, so the limited exemption was not included in the rule language.

Section 6-1-114 also provides a limited exemption from the proposed more stringent amendments to Section 6-1-310 (particulate matter concentration limits) and the proposed more stringent amendments to Section 6-1-311 (PM weight limits), for combustion from fuel fired indirect heat exchangers (furnaces, heaters, boilers, etc.) and gas-fuel fired control devices that control only gaseous emissions. Particulates from fuel combustion are generally the result of incomplete combustion, and the most practical method to control particulates is to install an oxidation system (either catalytic oxidation or afterburner) in the flue gas stream. Oxidation systems are currently Best Available Control Technology for new installations, but represent a significant alteration to an existing combustion flue gas stream, and can affect draft so induced draft fans are often necessary. Installation of any oxidation system is site specific and furnace/boiler specific, so beyond the scope of this general particulate control rulemaking project. Best Available Retrofit Control Technology that applies to these sources is “good combustion practice.” In addition, gas-fuel fired indirect heat exchangers are exempt from compliance testing required in Section 6-1-504. Liquid- and solid-fuel fired indirect heat exchangers remain subject to compliance testing required in Section 6-1-504 so additional information can be developed on these sources.

Section 6-1-115 provides a delayed compliance date for the more stringent TSP concentration limits in Section 6-1-310.2 for one specific facility. This facility is a sewage treatment plant that currently incinerates sludge. Source test data indicate the sludge incinerator may occasionally have difficulty meeting the more stringent TSP concentration limits. A delayed compliance date

[2] Morton Salt Safety Data Sheet: CAS Number 7647-14-5, MSDS Code 100

will give this facility time to identify controls that both satisfy the TSP limit and also address toxic emissions requirements in Rule 11-18.

Section 6-1-116 exempts two specific sources at one facility from the more stringent TSP limits in Section 6-1-310.2 and 6-1-311.2. These sources are abated by a wet scrubber that has an Air District Permit to Operate, and the wet scrubber constitutes best available control technology (BACT) for particulates emitted from these sources.

Section 6-1-117 provides a delayed compliance date for the more stringent TSP limits in Section 6-1-310.2 and 6-1-311.2 for one specific facility. This facility plans to install additional control equipment based on the requirements of Regulation 9, Rule 14: Petroleum Coke Calcining Operations. This equipment will not be installed and in operation until late 2019. This limited exemption delays the more stringent PM requirements for two additional years, until January 1, 2022, to provide time needed for tuning this control equipment.

One limited exemption that was considered and rejected was for situations where wind gusts exceed 25 mph. Fugitive dust is very difficult to control in high wind situations, and facilities can implement all feasible control measures to limit fugitive dust and still have visible emissions that can travel or carry beyond the property line. Rather than provide a specific exemption for such situations, staff proposes using the current method of allowing Compliance and Enforcement personnel to use their collective judgement and discretion regarding the degree to which the Air District enforces Section 6-1-307 during high wind situations. Enforcement inspectors currently, and will continue to consider the background level of dust upwind of any specific source, and whether the owner/operator has a written dust control contingency plan and has implemented the dust control measures in the contingency plan. Potential dust control measures are identified in the Staff Report for Regulation 6, Attachment 1-5.

D. Definitions

The common definitions in Regulation 6 apply to Rule 6-1. In addition, Rule 6-1 provides definitions for “Exhaust Gas Volume” and “Process Weight Rate.” These two definitions are used in setting PM emission limits.

“Exhaust Gas Volume” is defined as the volume of gas discharged from an emission point, adjusted to standard conditions (defined in Reg. 1-228) excluding any water vapor or steam.

“Particle” is defined because it is used in Section 6-1-305. It is defined as a minute quantity of solid matter or liquid droplet.

“Process Weight” is defined as total weight of all material going into a process operation, including solid fuels and any process air needed (generally for cooling), but excluding:

- Any liquid or gas fuels,
- Air that is not consumed as a reactant, or not critical to the process,
- Air that is used only for dilution, and
- Combustion air.

This definition of process weight is designed to include the volume of gases needed by the process, but excluding combustion products and excluding any dilution air.

“Regulated Bulk Material” site is defined as a bulk material site that produces, handles, loads, unloads, stores or uses more than 10 tons per year of bulk materials; and is subject to an authority to construct and/or permit to operate specifically for bulk material storange and handling issued by the Bay Area Air Quality Management District. New draft more stringent limits on fugitive dust will apply regulated bulk material sites.

A stockpile is defined as a storage pile of bulk material that is open or unenclosed, external to any barns, pit or silo.

E. Emission Limits

Currently, Regulation 6, Rule 1: General Requirements Sections 6-1-301 and 302 establish a visible emissions limit from any source of no more than Ringelmann 1, or 20 percent opacity for no more than three minutes in any hour observation period (five percent of the time), using EPA Method 9. This requirement applies to all sources, except for those outlined in Sections 6-1-303 and 304. Other aspects of Sections 6-1-301 to 306 include minor edits for clarity. Reference to opacity sensing devices is deleted, because those references are now included in Regulation 6-602.

Staff considered altering the language defining the opacity observation period from "any hour" to "any sixty-minute period." However, regarding facilities with Continuous Emissions Monitors (CEMs), the District Manual of Procedures, Volume V, Section 8.3.2 specifically identifies "clock hour" when determining any excess emission. Staff received feedback after the workshops indicating that several facilities rely on this interpretation in control of soot-blowing functions, and in calculations of CEM monthly summaries and excesses. Staff recommends leaving the opacity observation period definition as "any hour."

Section 6-1-307 requires Regulated Bulk Material Sites to meet a more stringent fugitive dust plume requirement of no more than 10% opacity (equivalent to Ringelmann 0.5), that does not linger in the air for more than a cumulative three minutes in any 60-minute observation period (five percent of the time) and that is not larger than five feet long, five feet high, or five feet wide. This significance threshold is designed to allow a reasonable or small dust plume that may occur from vehicle traffic, some active operation on solid materials, or minor puffs of dust from the wind. However, if the plume becomes taller than a person or wider than a car, the 10 percent opacity and three minutes in any 60-minute observation period limits apply.

In addition, Section 6-1-307 prohibits any visible dust plume from traveling or being carried by the wind beyond the property line of the site. Visible emissions are determined by EPA Method 22, which is based on whether the particulate plume is visible or not. This limit is established to be sure dust is not leaving the site and impacting neighbors.

Section 6-1-307 also requires any bulk material spill that is more than 12 inches high or covers an area of more than 25 square feet must be cleaned up by the end of the workday, unless the spill is stabilized or protected by a wind screen to prevent fugitive dust. Cleanup activities must meet a 20 percent opacity limit for no more than three minutes in any sixty-minute period.

Section 6-1-310 establishes Total Suspended Particle (TSP) concentration limits that apply to facilities with a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured.

Section 6-1-310.1 retains the current limit of 343 milligrams/dry standard cubic meter (0.150 grains/dry standard cubic foot (gr/dscf)).

Section 6-1-310.2 establishes emission limits for any source where the Potential to Emit (defined in Regulation 2-1-217) is greater than 1,000 kilograms/year (approximately six lbs per day). Emission limits are provided in a table, ranging from 0.150 to 0.0100 gr/dscf, depending on volume of Exhaust Gas Rate. These emission limits are equal to limits currently in place in the South

Coast Air Quality Management District (South Coast) Rule 404, and have been achieved in practice. Section 6-1-310.2 goes into effect July 1, 2020.

Section 6-1-310.3 defines adjustments needed to standardize emissions concentrations, namely 12 volume percent carbon dioxide (CO_2) for incinerators and salvage operations, or six volume percent oxygen (O_2) for heat transfer operations.

Section 6-1-311 establishes TSP weight limits that apply to facilities with a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured.

Section 6-1-311.1 retains the current table of limits, but clarifies the exact range of process weight for each emission limit. Limits range from 1.8 to 40 lbs per hour.

Section 6-1-311.2 establishes emission limits for any source where the Potential to Emit (defined in Regulation 2-1-217) is greater than 1,000 kilograms per year(kg/yr) (approximately six lbs per day). Emission limits are provided in a table, ranging from 1.0 to 30 lbs per hour depending on process weight rate. These emission limits are equal to limits currently in place in the South Coast Rule 405, and have been achieved in practice. Similarly, Section 6-1-311.2 goes into effect July 1, 2020.

Sulfuric acid manufacturing plant acid mist emissions were not studied in the scope of this rule development project. Section 6-1-320 for Sulfuric Acid Manufacturing Plans has minor clarifications. TSP limits in Sections 6-1-310 and 311 continue to apply to sulfuric acid manufacturing plants. Review of sulfuric acid manufacturing plant source tests indicates these plants easily meet these emissions limits.

Sulfur recovery unit acid mist emissions were not studied in the scope of this rule development project. Section 6-1-330 for Sulfur Recovery Units has minor revisions for clarification. TSP limits in Section 6-1-310 and 311 continue to apply to sulfuric recovery units. Review of sulfur recovery unit source tests indicate these units easily meet these emissions limits.

F. Administrative Requirements

The monitoring requirement in Regulation 6-102 applies.

Section 6-1-402 provides an Alternate Source Test Frequency from the source testing requirements in Section 6-1-504 and 505. The APCO will consider applications for reducing source test frequency based on actual test results if three consecutive results are in compliance with the applicable standard.

G. Monitoring and Records

Sections 6-1-501 – 503 have minor clarifications.

Section 6-1-504 defines TSP compliance testing requirements, based on the extent of the TSP emissions. Compliance testing is required for any source with a District Permit to Operate and TSP emissions greater than 2,000 kilograms per year (approximately 12 lbs per day). Testing frequency ranges from annually for facilities emitting more than 16,000 kg/yr to once every five years for facilities emitting 2,000 – 8,000 kg/yr. Inactive sources do not require testing until they operate for more than 90 days.

Similarly, Section 6-1-505 defines sulfur trioxide (SO_3) / acid mist compliance testing requirements, based on the extent of the acid mist emissions. Compliance testing is required for any source with a District Permit to Operate and acid mist emissions greater than 2,000 kg/yr (approximately 12 lbs per day). Testing frequency ranges from annually for facilities emitting more than 16,000 kg/yr to once every five years for facilities emitting 2,000 – 8,000 kg/yr. Inactive sources do not require testing until they operate for more than 90 days.

Section 6-1-506 establishes the requirements for regulated bulk material site monitoring of fugitive dust visible emissions. These facilities are not expected to have a person certified to assess plume opacity; but they are expected to establish a management system to monitor sources and operations with the potential to generate fugitive dust, and take corrective actions if there is any indication that fugitive dust is becoming significant. These sites are not asked to make a "compliance determination." Rather, they are asked to pay attention to the potential for fugitive dust, and take corrective actions if fugitive dust appears to become significant.

Each regulated bulk material site is required to monitor sources and active operations for fugitive dust visible emissions when the potential for dust is high due to wind conditions and/or work activities as follows:

- Monitor the nature and extent of fugitive dust visible emissions from each potential source or operation using simple observation of the emission, with the sun (or artificial light) positioned behind the observer:
    - Observe each source with the potential to generate fugitive dust that is located within 1,000 feet of the site property line on a workday when the wind is blowing from the source toward the property line – at least twice each such workday; and
    - Observe all sources with the potential to generate fugitive dust at least once each workday.
    - Petroleum coke, calcined coke and coal operations are required to monitor during daylight hours only, since black dust is virtually impossible to see at night.
- The APCO may specify the monitoring and frequency of monitoring if needed.
- Document the sources and operations monitored each workday.
- Maintain records in electronic, paper hard copy or log book format for two years and make these records and any other photographic or video records of fugitive dust the site may have available to the Air District upon request.
- Air District enforcement will occur through the normal process of site visits including visual observations and records reviews, and may be adjusted based on conditions found.

Monitoring is required during active operations regardless of when the workday starts or ends. Visible emission limits are in effect day and night, and subject to enforcement action by the District. Lighting at each facility varies, so monitoring at night is more difficult.

Any individual that monitors fugitive dust plumes is not expected to be proficient in either EPA Method 9 or EPA Method 22. However, when observing sources with the potential to create fugitive dust, they are expected to position themselves with the sun (or artificial light) behind them, as this is the positioning required in EPA Method 9.

H. Manual of Procedures

Section 6-1-601 affirms that the common test methods in Regulation 6 apply to this rule, including the test methods used to assess fugitive dust visible emissions.

Section 6-1-602.1 defines the test method for TSP as EPA Method 5 or an approved alternate method as described in Regulation 6-603. Source tests are not required if the sampling facilities are not adequate to conduct the source test as required by the test method. The Air District reserves the right to require modification of the sampling facilities as needed (when possible) per Regulation 1, Section 501 so that a proper source test can be conducted.

Section 6-1-602.2 defines the test method for acid mist as EPA Method 8 or an approved alternate. Source tests are not required if the sampling facilities are not adequate to conduct the source test as required by the test method. The Air District reserves the right to require modification of the sampling facilities as needed (when possible) per Regulation 1, Section 501 so that a proper source test can be conducted.

I. Comparative Analysis

Proposed amendments to Rule 6-1 bring it up to date with the most stringent regulations in California. TSP concentration and weight limits meet or exceed the most stringent in South Coast, San Joaquin Valley, and Sacramento Metro air districts.

Requirements for regulation bulk material storage and handling are analogous and more stringent that South Coast Rule 403 and Rule 403.1, and San Joaquin Valley Unified Air Pollution Control District (San Joaquin Valley) Rule 8031. Section 6-1-307 is performance based requiring plumes no greater than 10 percent opacity, where the South Coast and San Joaquin Valley rules require specific particulate control plans or specific control measures provided as options to control fugitive dust to less than 20 percent opacity (Ringelmann 1).

Acid mist limits for sulfuric acid manufacturing and sulfur recovery units equal those in the other air districts. Draft compliance testing requirements strengthen this rule. Source test methods are clarified.

IV. EMISSIONS and EMISSIONS REDUCTIONS

Table IV-1 summarizes the emissions and emission reductions anticipated from the draft amendments to Rule 6-1.

Table IV-1: Estimated Emissions Reductions from Draft Amendments to Rule 6-1:

Source Categories	**TSP** (tpd)	**PM_{10}** (tpd)	**$PM_{2.5}$** (tpd)
Current Emissions: Other Industrial / Commercial Processes	16.7	9.83	5.78
Estimated Emission Reductions	0.45	0.37	0.03
Percent Reduction	2.7%	3.8%	0.5%

Current PM emissions estimates from the 2011 Emission Inventory total 174.2 tons per day (tpd) of TSP, 105.6 tpd PM_{10}, and 46.31 tpd $PM_{2.5}$. The emissions addressed by these proposed amendments are from the target category of “Other Industrial / Commercial Processes.”

A. Summary of Estimated Emission Reductions

The proposed more stringent TSP limits will impact only one moderate source of PM emissions. Most Bay Area source’s PM limits have been established through permit conditions when the source was installed or modified. The general nature of the TSP limits in Rule 6-1 require that they apply to all PM sources, so they are less restrictive than the permit conditions that may be

applied to any specific source. As a result, no emission reductions are expected to be realized from the proposed more stringent TSP limits.

One source, the Central Contra Costa Sanitary District sludge incinerator, is expected to install controls to address toxic air contaminant (TAC) emissions within the next several years to meet the requirements in Rule 11-18. These controls will also reduce TSP emissions by approximately 16 lb/day (three tons per year). However, such controls are not cost effective for a relatively minor three tons per year TSP reduction. In addition, the timeframe required for most public owned treatment works to install controls is a total of six years for budgeting, financing, design, installation and startup. Section 6-1-114 provides this facility a delayed compliance period of seven years from adoption to give the facility adequate time to address toxics and TSP emissions.

While developing possible amendments for Rule 6-1, staff identified Bay Area Rapid Transit (BART) four maintenance yards that each have BART car-cleaning facilities as having potential for significant PM emission reductions. However, staff discovered that the existing abatement systems (roto-clone wet scrubbers) were not accounted for in the existing emissions inventory. BART car-cleaning facilities are currently in compliance with the more restrictive emission limits in Rule 6-1.

The proposal contains more stringent TSP limits that may also impact two additional facilities: a bottle manufacturing facility in Oakland, and a facility in Santa Rosa that manufactures paper tape used to join and smooth two sections of wallboard. The glass manufacturing facility in Oakland is shut down with no plans to re-open. The current emissions performance from the paper tape manufacturer is estimated, with no supporting source test information available. Additional source tests are needed to determine whether additional controls will be required, and whether those controls would be cost effective. Based on these uncertainties, no emission reductions from these two facilities are included in this summary.

As affected facilities perform compliance source testing, some additional sources may be affected by the amendments to Rule 6-1. Cost effective control options are available for almost all types of sources.

<u>Bulk Material Sources with more than six lbs per day TSP emissions</u>
There are 72 facilities with 134 sources of more than six lbs per day of TSP emissions. Forty- four of these sources are already equipped with water spray systems, and the other 90 of these sources do not currently appear to have any dust controls. Staff estimates that the 44 sources may elect to upgrade their existing water sprays to water fog or water mist systems to reduce water use, but this will not significantly reduce emissions. Staff estimates that the remaining 90 sources will be controlled with wind screens, transfer point shrouds, and loading / unloading chutes. Some judicious use of water fog and water mist systems may be necessary in locations where it is difficult to fit wind screens or shrouds. Staff expects that less than half of the 90 sources will require supplemental water fog or sprays along with wind screens. In addition, staff estimates that only half of these sources will actually install controls, because the facilities will be able to improve their operations to meet the 10 percent opacity requirements. Emissions reductions are estimated based on only 45 sources adding additional emissions control. Staff assumes wind screens/shrouds and loading chutes are 70 percent effective, resulting in emission reductions of 0.37 tpd of PM_{10}, and 0.03 tpd of $PM_{2.5}$.

<u>Bulk Material Sources with two to six lbs per day TSP emissions</u>
There are 72 facilities with 123 sources of TSP emissions ranging from two to six lbs. per day (some of these facilities also have sources with greater than 6 lbs per day of TSP emissions). Forty of these sources are already equipped with water spray systems, and the other 83 of these sources do not currently appear to have any dust controls. Staff estimates that some of the 40 sources with water sprays may be upgraded to water fog or water mist systems to reduce water

use, but will not significantly reduce emissions. Staff estimates that the remaining sources will likely not be controlled with wind screens, transfer point shrouds, and loading/unloading chutes. Current emissions of two – six lbs per day may be small enough to meet the visible emissions performance objective of ten percent opacity without installing additional controls. Staff assumes no additional emissions reductions from these sources.

V. ECONOMIC IMPACTS

A. Cost Effectiveness

Proposed amendments to Rule 6-1 TSP concentration limits, and TSP weight limits are consistent with the requirements and emission limits that have been demonstrated in practice, as South Coast, San Joaquin Valley, and Sacramento Metro air districts have had similar regulations in place for several years. Control technologies that have been "achieved in practice" can be required as best available control technology (BACT) without having to make a cost effectiveness determination.[3] In addition, since these more stringent TSP limits do not appear to trigger installation of any emission controls, no cost effectiveness analysis is required.

Central Contra Costa Sanitary District solid sludge incinerator is the only facility that would be required to meet the more stringent TSP concentration limits. An improved wet scrubber is estimated to cost $17,000,000 in capital cost, and $2,200,000 annualized costs including capital amortization, operating and maintenance costs. Emission reductions are only three tons per year, so any controls required specifically for PM do not appear to be cost effective. CCC Sanitary District staff indicate that they anticipate installing controls to address TAC emissions and expect PM emission reductions to be a side-benefit. Staff has excluded PM emission reductions from CCC Sanitary District because they are not a direct result of amendments to Rule 6-1.

The proposed more stringent TSP limits may also affect a facility in Santa Rosa that manufactures paper tape used to join and smooth two sections of wallboard. The current emissions performance from the paper tape manufacturer is estimated at 117 lbs per day. If these emissions are verified with a source test, additional controls are cost effective in reducing emissions. Staff estimates that a baghouse could be added downstream from the existing cyclone, reducing PM emissions by at least 90 percent and resulting in emission reductions of 105 lbs per day. A baghouse is estimated to cost $315,000 in capital cost, amortized to $45,000 per year plus additional utility and maintenance costs of $50,000 per year. Total annual costs of $95,000 per year for a reduction in 13.7 tons per year of PM results in a cost effectiveness of $6,900 per ton of reduced TSP. This is well within the normal range for cost effectiveness.

Staff found no additional facilities with PM emissions quantified by source test that are affected by the amendments to Rule 6-1. As mid-sized and smaller particulate matter sources begin to conduct source tests, some may find a need to install controls. However, most of these sources currently have more stringent permit limits than those being proposed. Staff estimates no emission reductions from these sources.

Proposed new Section 6-1-307 will affect 72 facilities, with 134 sources with PM emissions currently estimated to exceed 6 lbs per day of TSP. Eighteen of these facilities already have water spray abatement in place, so staff assumes each facility will make minor improvements to the existing systems and be able to meet the requirements of this draft new requirement. Fifty-four of these facilities, with 90 sources may require controls. The sources have a wide range of scale for processing and handling bulk materials. The scope of the controls is directly set by the specific

[3] BAAQMD Engineering Procedure: New or Updated BACT Determinations, December 19, 2006

bulk handling operation involved, and the size of the bulk material handling facilities. Section 6-1-307 may affect another 72 facilities with 123 sources with PM emissions currently estimated to range from two to six lbs per day of TSP. However, staff estimates PM emissions less than six lbs per day will not exceed the draft opacity limit.

Attachment 2, Table 2-1 describes each of the 90 sources that will potentially require controls. Emission reduction estimates assume half of these 90 sources will find ways to meet the opacity limit and other requirements without having to install significant controls. Staff assumes that only half of the facilities will actually install the controls shown in Table 2-1. Total estimated costs to control 45 sources is $866,000 in capital costs, and $206,000 in annual costs. Expected emission reductions are 747 lbs per day of PM_{10} (136 tons per year).

Water Use and Cost

Five water fog systems are recommended in Table 2-1. Each of these water fog systems is anticipated to use 624,000 gallons of water per year, totaling 3,120,000 gallons of incremental water use. Thirty-four water mist systems are recommended in the table above. Each of these water mist systems is anticipated to use 312,000 gallons per year, totaling 10,608,000 gallons of incremental water use. Total incremental water use for the proposed wind screens, and judicious use of water is 13,728,000 gallons per year. Staff assumes all five of these water fog systems will be installed. Total cost for 13,728,000 gallons of water at $0.01 per gallon is $137, 280 per year.

Total costs to control fugitive dust visible emissions from bulk material handling is estimated to be $206,000 + $137,280 = $343,280 per year. Emission reductions are estimated to be 136 tons per year. Cost effectiveness for these controls is estimated to be $2524 per ton of reduced PM_{10}. The poorest cost effectiveness is found for two controls: $13,968 per ton for a water fog system at a quarry operation, and $10,303 per ton for a stockpile windscreen at a second quarry operation. These cost effectiveness levels are within normal acceptable ranges for PM reductions.

Source Test Costs

Proposed amendments to Rule 6-1 explicitly require compliance testing of permitted sources ranging from annually to once every five years, depending on the extent of the emissions. The estimated cost to conduct an appropriate compliance source test is $3,000 – 5,000. The estimated costs to modify sample ports to conduct these tests, if necessary, are estimated to cost less than $10,000. Staff estimates approximately 50 sources will require source testing annually, 60 sources will require source testing biennially, and 250 sources will require source testing every five years. Staff estimates no more than 50 sources will require sample port modifications.

B. Incremental Cost Effectiveness

There are no controls required directly from amendments to the TSP concentration limits and TSP weight limits proposed for Rule 6-1, so no cost effectiveness analysis, and no incremental cost effectiveness analysis are required.

Each regulated bulk material storage and handling site will determine what controls are needed to limit fugitive dust plumes to meet the 10 percent opacity for significant plumes (greater than five feet high, five feet long, five feet wide). The next more stringent requirement would be to require any fugitive dust plume to meet the 10 percent opacity requirement. This requirement would include any small dust plume (from a wind current on a stockpile, or from the wheel of a truck driving down an unpaved road). Staff did not recommend this limit because of the concern that the more stringent limit would cause many facilities to use excessive water to control dust. The degree of stringency is based on concern about water use rather than a concern about incremental cost effectiveness.

C. Socioeconomic Impacts

The Air District contracts with an independent consultant to conduct a Socioeconomic Analysis of potential economic impacts from the proposed amendments to Rule 6-1. After staff received additional input during the workshop process, a final draft proposal and staff report have been used to finalize the Socioeconomic Analysis. The Socioeconomic Analysis is included in the final proposal, posted for public review and comment at least 30 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposal, and public input before taking any action on the amendments to Rule 6-1.

The Socioeconomic Analysis concludes that control costs are less than significant, will not impact small businesses, and will not lead to job reductions.

D. District Impacts

An exemption for small stationary sources with potential to emit either TSP or PM_{10} emissions at less than 1,000 kg per year may create additional work for Air District permit engineers. Facilities that have permitted sources currently estimated to have emissions less than 2,000 kg per year may wish to take advantage of the proposed exemption by challenging the current estimating techniques and/or EPA AP-42 Emission Factors used. Permit engineers may be asked to review the current PM emissions factors, which can take approximately one hour of engineering time for each source.

Air District Meteorology and Measurement Division resources will be needed to consult with each permitted source to ensure each source has the proper sample ports, equipment and access facilities needed to conduct the required source test. Staff anticipates the source test section will fit this work into their normal day-to-day work, with no impact on personnel requirements or costs.

Compliance and Enforcement inspectors will not see any increase in workload because they currently have responsibility for inspecting regulated bulk material sites. Compliance and Enforcement currently conducts planned inspections of bulk material sites and permitted disturbed surface sites as part of their annual coverage of all permitted facilities.

Compliance and Enforcement has trained its inspectors to use an existing physical object, or traffic cone or other device of a known size to establish a frame of reference when assessing whether a plume is larger than five feet. The inspectors will likely take a picture of the plume to document its size, while conducting the opacity assessment to determine opacity. Inspectors have been equipped with tape measures to measure the area of a bulk material spill. Costs for these tape measures totaled $700 at $10 each for 70 inspectors.

Compliance and Enforcement will need to determine to what extent, and when they may want to implement EPA ALT-082, the digital camera technique that can be used to measure opacity as an alternate to EPA Test Method 9.

VI. REGULATORY IMPACTS

Regulatory impact analysis is required by H&SC Section 40727.2, comparing the proposal to other Air District, State and federal rules addressing the same sources. The following table provides this regulatory impact analysis.

Amendments to Regulation 6, Rule 1: H&SC Section 40727.2 Regulatory Analysis

Section	**Description** (paraphrased)	Comparable State or Air District Provision	Comparable Federal Provision	Discussion
101	Description / Purpose	Consistent with SCAQMD 401 SCAQMD 1157, 1158 SJVUAPCD 4101 SMAQMD 401		
102	Applicability of General Provisions	From Regulation 6		
110	Exemption: Activities Subject to Other Rules	Consistent with Non-duplication requirements		
111	Limited Exemption: Blasting Operations	Consistent with SCAQMD 1157 SJVUAPCD 8021		
112	Limited Exemption: Portland Cement Manufacturing	Consistent with Non-duplication requirements		
113	Limited Exemption: TSP Concentration and Weight Limits	Consistent with non-duplication for commercial cooking, Unique exemption for pure salt and sugar, No controls readily available for combustion		Pure sugar and salt are readily adsorbed into humans, with very little health impact. Combustion controls out of scope for this rule-making.
114	Limited Exemption: TSP Concentration Limit	Unique situation for one specific facility		Delayed compliance date.
200	Definitions	Consistent with SCAQMD 102, 401 SJVUAPCD 1020, 4101 SMAQMD 101, 401		
300	Standards / Emission Limits			
301-306	Visible Emissions Limits	Consistent with SCAQMD 401 SJVUAPCD 4101 SMAQMD 401		20% opacity or Ringelmann 1 is consistent throughout California
307	Regulated Bulk Material Site fugitive dust visible emissions limits	SCAQMD Rule 403 SCAQMD Rule 1157 SCAQMD Rule 1158 SJVUAPCD Rule 8011		Consistent with Regulation 6 control measures cited in Reg 6 Staff Report, Attachment 1-5.

		SJVUAPCD Rule 8031		SCAQMD Rule 1157 requires no visible emissions > 100 feet which could be more stringent, or less stringent than the limit of the property line.
310	PM Concentration Limits	Consistent with SCAQMD 404 SJVUAPCD 4201 SJVUAPCD 4203 SMAQMD 404		Equal to most stringent in California
311	PM Weight Limits	Consistent with SCAQMD 405 SJVUAPCD 4202 SMAQMD 405		Equal to most stringent in California
320	Sulfuric Acid Manufacturing	Consistent with BAAQMD 12-6 SCAQMD 469 SJVUAPCD Rule 4802	40 CFR Part 60: Subpart H EPA-450/2-77-019	Acid mist controls out of scope for this rule-making.
330	Sulfur Recovery Units	Consistent with BAAQMD 9-1 SCAQMD 468	NSPS 40 CFR 60 Subpart J, Ja	Acid mist controls out of scope for this rule-making.
400	Administrative Requirements	Monitoring from Regulation 6		Monitoring required to ensure compliance.
500	Monitoring and Records	Consistent with BAAQMD Reg 1 SCAQMD 404, 405 SJVUAPCD 4201, 4202 SMAQMD 404, 405 SJVUAPCD Rule 8011		Demonstration of compliance requirements added. Consistent monitoring and records requirements.
600	Manual of Procedures	Consistent with EPA Source Test Methods 5, 8, 9, 22, 201a, 202, 203a,b,c	Consistent with EPA Source Test Methods 5, 8, 9, 22, 201a, 202, 203a,b,c	Source test methods added.

VII. ENVIRONMENTAL IMPACTS

A. Review of Potential Environmental Impacts Under CEQA

The Air District contracts with an independent consultant to conduct a California Environmental Quality Act (CEQA) analysis of potential environmental impacts of the new Regulation 6, and draft amendments to Rule 6-1. The consultant has made an initial assessment of any environmental impacts based on proposed new Regulation 6 and proposed amendments to Rule 6-1, and this staff report. In addition, the CEQA analysis has also been conducted on the proposed new Rule 6-6: Prohibition of Trackout. The CEQA analysis, attached as Appendix B, combines the analysis to review all impacts of the proposed new Regulation 6, proposed amendments to Rule 6-1 and Rule 6-6 together all as one project, so that the cumulative impact of these proposals can be considered.

The CEQA analysis shows that no significant environmental impacts are expected, and a Negative Declaration has been prepared. The CEQA Negative Declaration will be included with the final proposals, posted for public review and comment at least 30 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposals, and public input before taking any action on the new Regulation 6, amendments to Rule 6-1, and new Rule 6-6.

VIII. RULE DEVELOPMENT / PUBLIC PARTICIPATION PROCESS

A. Rule Development Process

The Air District's 2010 Clean Air Plan addressed PM, including significant health impacts associated with PM, and was approved on September 15, 2010. The 2010 Clean Air Plan included Stationary Source Measure SSM 6: General Particulate Matter Emission Limitation. In addition to developing amendments to Rule 6-1 to satisfy SSM 6, staff started work on this rule-making project in April 2010 by reviewing the entire inventory of PM emissions and identified source categories where PM (particularly $PM_{2.5}$) emissions are significant, the Air District has authority, and potential for substantial PM reductions are available.

The proposed amendments to Rule 6-1 are part of a rule-making process that began with the 2010 Clean Air Plan and continues to address a commitment by the Air District's Board of Directors to review Regulation 6, Rule 1, identified as Stationary Source Measure SS31 in the Air District's 2017 Clean Air Plan. Since the 2010 Clean Air Plan originally identified Rule 6-1 as a Stationary Source Control Measure, Air District staff further committed to taking steps to address the Bay Area's PM challenges in a November 2012 report entitled *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area*. These proposed amendments to Regulation 6, Rule 1 begin to fulfill these important commitments to reduce PM emissions and improve public health.

Staff based the proposed amendments to Rule 6-1 on the 2011 emissions inventory. Staff identified the source categories to be considered during review of potential amendments, and identified the largest sources in each category. Staff selected 55 of the largest permitted stationary sources, and visited each one to more fully understand each facility's business, each unique emissions source, and discuss potential control techniques

available to reduce PM emissions. In addition, concerns about the lack of information regarding particle size distribution, possible sources of condensable PM, and potential secondary PM formation were discussed. Staff visited eight facilities that store and handle petroleum coke and coal to ensure the unique issues with these solids were incorporated into the rule development process. Staff used the information from these visits to develop the proposed amendments to Rule 6-1, an overarching Regulation 6 that applies to all Regulation 6 rules, and new draft Rule 6-6: Prohibition of Trackout; and to estimate the emission reductions that could be achieved by implementing these draft rule changes.

Staff conducted eight workshops throughout the Bay Area from January 30 – February 8, 2017. These workshops were conducted in parallel with open house forums for the 2017 Clean Air Plan. Many stakeholders voiced concern that the PM workshops were diminished by being scheduled with the Clean Air Plan Open Houses, and the combined open house / workshop format prevented staff from making a formal presentation regarding the preliminary drafts of each rule or engaging in direct questions / answers. Others felt the personal interaction with staff regarding the preliminary drafts for each rule provided better opportunity for genuine discussion, including questions / answers.

Comments received after the workshops provided additional input regarding the process used for outreach to the wide variety of affected parties. Many indicated that they had not heard about the workshops at all, or only at the last minute. Since some stakeholders considered the Public Outreach and Consultation process described below in Section B less effective than a workshop focused specifically on the rules, staff will mail Public Hearing notices to each Air District permitted facility with any significant PM emissions, and mail Public Hearing notices to additional facilities with similar Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) codes from a business database used by the Socioeconomic Analysis contractor called InfoUSA, including construction firms.

Proposed new Regulation 6 will provide the foundational regulation for current PM rules, and potential future source specific PM rules. Proposed new Regulation 6 rule language, proposed amendments to Rule 6-1 and this accompanying staff report are the next step in the rule development process to further address PM emissions. Staff anticipates that proposed new Regulation 6, and proposed amendments to Rule 6-1 will be considered together at a Public Hearing in Spring 2018. Proposed new Rule 6-6: Prohibition of Trackout and its associated staff report may also be considered at that Public Hearing.

A CEQA Analysis has conducted on the proposed new Regulation 6, proposed amendments to Rule 6-1, and proposed new Rule 6-6 as one project, so that cumulative impact of these three rule development projects can be considered. The Socioeconomic Analyses for each project were done separately.

B. Public Outreach and Consultation

In analyzing the inventory of PM emissions and source categories where PM (particularly $PM_{2.5}$) emissions are significant, where the Air District has authority, and the potential for substantial PM reductions, staff consulted with the following interested and affected parties:

Businesses	Governmental Agencies
Morton Salt – Newark	CALTRANS District 4 - Oakland
Cargill – Newark	Bay Area Regional Water Quality Board - Oakland

Criterion Catalysts - Pittsburg	North Coast Regional Water Quality Board – Santa Rosa
CertainTeed Gypsum – Napa	Bay Area Rapid Transit – Richmond Maintenance Yard
Maxwell House – San Leandro	Alameda County
C & H Sugar – Crockett	Contra Costa County
Con Agra – Oakland	Marin County
CEMEX – Oakland	Napa County
CEMEX – Clayton	Santa Clara County
Strategic Materials – San Leandro	San Francisco City & County
Dutra Materials – San Rafael	San Mateo County
Superior Supplies – Santa Rosa	Solano County
Granite Rock – Redwood City	Sonoma County
Hanson Aggregates – Clayton	Central Contra Costa Sanitary District
Bodean / Mark West Quarry – Santa Rosa	City of Hayward
PABCO Gypsum – Redwood City	City of Napa
Georgia Pacific Gypsum - Antioch	City of Oakland
Syar – Napa	City of San Jose
Syar – Santa Rosa	City of San Rafael
Syar – Vallejo	City of Santa Rosa
Soiland Quarry - Cotati	
Langley Hill Quarry - Woodside	**Industry Associations**
Granite Construction – Santa Clara	Association of Building Contractors
Granite Construction – San Jose	Associated Roofing Contractors of the Bay Area Counties
Willowbrook Feeds – Petaluma	California Asphalt Pavement Association
Hunt & Behrens – Petaluma	Construction Industry Air Quality Coalition
Owens-Corning – Santa Clara	Northern California Engineering Contractors
Owens-Brockway - Oakland	
Waste Management – San Leandro	
Zanker Road Material Processing – San Jose	
Waste Management - Altamont	
Redwood Landfill	
Guadalupe Landfill	
Ox Mountain Landfill – Half Moon Bay	
Clover Flat / Upper Valley Resources	
Potrero Hills Landfill	
Stavin	
McGuire & Hester Construction - Oakland	
Ghilotti Bros. Construction – San Rafael	
Universal Building Services – Richmond	
Statewide Sweeping – Milpitas	
Levin Richmond Terminal	
Lehigh Cement	
Phillips 66 Coker	
Phillips 66 Coke Calciner	
Shell Coker	
Tesoro Coker	

Valero Fluid Coker	
APS West	
Carbon Inc.	

These discussions led to a review of the Storm Water Pollution Prevention Plan (SWPPP) Best Management Practices, and the suggestion that any proposed requirements should be consistent with SWPPP requirements.

As described above, feedback indicates that outreach was could be been more robust. In light of this, Public Hearing notices will be mailed to all Air District permitted facilities with significant PM emissions and to all entities with similar Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) codes from a business database used by the Socioeconomic Analysis contractor called InfoUSA, including construction firms.

Public Hearings are the next step in these rulemaking processes. Air District staff will publish the Public Hearing package for proposed new Regulation 6: Common Definitions and Test Methods; and proposed amendments to Regulation 6, Rule 1: General Requirements. Air District staff will accept written comments, will respond to all comments received, and will present final proposals to the Air District's Board of Directors for consideration. Response to comments is included as Appendix A of this staff report.

IX. CONCLUSION / RECOMMENDATIONS

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. This section addresses each of these findings.

A. Necessity

"'Necessity' means that a need exists for the regulation, or for its amendment or repeal, as demonstrated by the record of the rulemaking authority." H&SC section 40727(b)(1).

Proposed amendments to Regulation 6, Rule 1: General Requirements are needed to update emission limits that have not been reviewed for more than two decades, and to clarify compliance testing requirements and test methods. Proposed new Section 6-1-307 applies to bulk material storage and handling that are currently permitted by the Air District, and is needed to address the significant PM emissions from the source category of Other Industrial and Commercial Processes. Bulk Material Storage and Handling addresses a broad cross-section of these sources. Section 6-1-307 requires more stringent control of fugitive dust visible emissions, specific monitoring, and cleanup actions if fugitive dust is excessive. The Bay Area is not yet in attainment for either PM_{10} or $PM_{2.5}$ California Ambient Air Quality Standards.

B. Authority

"'Authority' means that a provision of law or of a state or federal regulation permits or requires the regional agency to adopt, amend, or repeal the regulation. H&SC section 40727(b)(2)."

The Air District has the authority to adopt this rule under Sections 40000, 40001, 40702, and 40725 through 40728.5 of the California Health and Safety Code.

C. Clarity

"'Clarity' means that the regulation is written or displayed so that its meaning can be easily understood by the persons directly affected by it." H&SC Section 40727(b)(3)

Proposed amendments to Regulation 6, Rule 1 are written so that their meaning can be easily understood by the persons directly affected by them. Further details in the staff report clarify the proposals, affected emission sources, compliance options, and administrative requirements for the industries subject to this rule.

D. Consistency

"'Consistency' means that the regulation is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations." H&SC Section 40727(b)(4)

The proposed new rule and amendments to the existing rule are consistent with other Air District rules, and not in conflict with state or federal law.

E. Non-Duplication

"'Nonduplication' means that a regulation does not impose the same requirements as an existing state or federal regulation unless a district finds that the requirements are necessary or proper to execute the powers and duties granted to, and imposed upon, a district." H&SC Section 40727(b)(5)

Amendments to Rule 6-1 are non-duplicative of other statutes, rules or regulations. To the extent duplication exists, such duplication is appropriate for execution of powers and duties granted to, and imposed upon the Air District.

F. Reference

"'Reference' means the statute, court decision, or other provision of law that the district implements, interprets, or makes specific by adopting, amending, or repealing a regulation." H&SC Section 40727(b)(6)

Implementing, interpreting or making specific the provisions of the California Health and Safety Code Sections 40000, 40001, 40702 and 40727.

The proposed rules have met all legal noticing requirements, have been discussed with the regulated community and other interested parties, and reflect consideration of the input and comments of many affected and interested stakeholders.

G. Recommendations

Air District staff recommends adoption of amendments to Regulation 6, Rule 1: General Requirements and adoption of the CEQA Negative Declaration.

REFERENCES

1. BAAQMD 2010 Clean Air Plan, September 15, 2010
2. BAAQMD Regulation 5: Open Burning
3. BAAQMD Regulation 6, Rule 2: Commercial Cooking Equipment
4. BAAQMD Regulation 6, Rule 3: Wood Burning Devices
5. BAAQMD Regulation 12, Rule 4: Sandblasting
6. BAAQMD Board Resolution 1390
7. BAAQMD Advisory Council, Ultrafine Particles: Ambient Monitoring and Field Studies presentation, 2/8/2012
8. BAAQMD Advisory Council, Ultrafine Particles: Ambient Monitoring and Field Studies presentation, Philip M. Fine, SCAQMD, 2/8/2012
9. BAAQMD Advisory Council, Concentrations of Ultrafine Particles and Related Air Pollutants on and Near Roadways and Other Urban Microenvironments presentation, Eric Fujita, Desert Research Institute, Reno, NV, 2/8/2012
10. EPA Stationary Source Control Techniques Document for Fine Particulate Matter, October 1998
11. EPA Test Methods 5, 5B, 5F, 9, 17, 22
12. EPA Test Methods 201A, 202, 203A, 203B, 203C
13. EPA RACT/BACT/LAER Clearinghouse
14. EPA AP42, Fifth Edition, Volume 1, Chapter 13: Miscellaneous Sources, 13.2
15. EPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures; EPA-450-92-004; September 1992.
16. California Health and Safety Code, §41700
17. California Health and Safety Code, §40000, §40001, §40702, §40725 - 40728,
18. California Air Resources Board - CALIFORNIA EMISSION INVENTORY AND REPORTING SYSTEM (CEIDARS), Particulate Matter (PM) Speciation Profiles, 7/28/2009
19. South Coast Air Quality Management District, Rules 401, 403, 403-1, 404, 405, 444, 445, 1105-1, 1112-1, 1133-1, 1137, 1155, 1156, 1157, 1158, 1186, 1186-1
20. San Joaquin Valley Air Pollution Control District, Rules 4101, 4103, 4106, 4201, 4202, 4203, 4303, 4901, 8011, 8021, 8031, 8041, 8051, 8061, 8071, 8081
21. San Joaquin Valley Air Pollution Control District, Draft Staff Report, BACM Amendments to Regulation VIII (Fugitive PM_{10} Prohibitions), 9/27/2001
22. San Joaquin Valley Air Pollution Control District, Draft Staff Report – Appendix C, Cost Effectiveness Analysis of Regulation VIII (Fugitive PM_{10} Prohibitions), 9/27/2001
23. Sacramento Air Quality Management District, Rules 401, 403, 404, 405, 406, 407, 409, 417, 421
24. Maricopa County, Arizona Regulation III, Rule 310: Fugitive Dust from Dust-Generating Operations
25. Maricopa County, Arizona Quick Reference Dust Control Guide
26. Northeast States for Coordinated Air Use Management, Assessment of Control Technology Options for BART-Eligible Sources, March 2005
27. California Water Resources Control Board, Construction Storm Water Program, http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml

28. 2009-0009-DWQ Construction general permit *(effective July 1, 2010)*
29. California Storm Water Quality Association, Storm water Best Management Practice Handbook Portal: Construction

Attachment 1: Cost Estimates for Various Dust Controls
Attachment 2: Cost Estimates for Specific Bulk Material Storage and Handling Facilities

APPENDICES

A. Comments and Responses
B. Socioeconomic Analysis
C. CEQA Documents

Attachment 1: Cost Estimates for Various Dust Controls

Costs of Controls for Bulk Material Handling

Wind screens can be used to shield almost any bulk material stockpile, handling equipment, or loading/unloading operations. Wind screens around stockpiles are most effective if they are at least as high as the pile, and extend beyond each edge of the pile. Wind screens can also be used to protect bulk material handling equipment (crushers, conveyors, transfer points, screen, and loading facilities from wind erosion. The following provide the cost estimates for various wind screen equipment:

- Wind Screens for stockpiles
  - 100-foot section of 10-foot high fencing estimated to cost $15 - $40 / foot, or $3,000 capital[1]
  - Slats or nylon mesh to provide proper porosity costs up to $5/foot[2]
  - Estimated costs for construction and foundations equals double the cost of materials
  - Total capital for 100 feet of 10-foot high wind screen is $70/foot, equaling $7,000 capital, amortized to $1,050 per year
  - Estimated cost for 100-foot section of 20-foot high wind screen is $140 / foot, equaling $14,000 capital, amortized to $2,100 per year
  - Estimated cost for 100-foot section of 30-foot high wind screen is $280 / foot, equaling $28,000 capital, amortized to $4,200 per year
  - Can control erosion down-wind for approximately eight – 10 times the height of the barrier.
  - Total cost for a 10 feet tall stockpile requires 100 feet of windscreen – with capital costs of $7,000, amortized to $1,575 per year
  - Total cost for a 20 feet tall stockpile requires 200 feet of windscreen – with capital costs of $28,000, amortized to $4,200 per year
  - Total cost for a 30 feet tall stockpile requires 300 feet of windscreen – with capital costs of $84,000, amortized to $12,600 per year
- Wind Screens for conveyors
  - Typical conveyor is about 100-foot long
  - Must erect a wind screen on at least one side (preferably the upwind side) of the conveyor
  - Design check to be sure structural integrity is adequate - $2,000
  - Materials costs for stainless steel wire mesh screen - $1,500[3]
  - Additional structural steel to reinforce stainless mesh - $500[4]
  - Labor to install – roughly equal to materials costs - $2,000
  - Total costs – $6,000 capital, amortized to $900 per year
- Wind Screens for conveyor transfer points
  - 4-sided 4ft X 4ft stainless steel mesh for wind screen - $250
  - 4 sided 4ft X 4ft plastic shrouds - $150

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[1] An 8'-12' tall commercial-grade chain-link fence to enclose a residential tennis or basketball court can cost $15-$40 or more a foot. Production Fence Works in Georgia estimates average cost for an 8' high, 60'x100' fence around a single tennis court with a single walk-in gate at $9,200.

[2] Because of its open weave, a chain-link fence is transparent. To make it more opaque, metal, wood or vinyl privacy slats can be woven into the mesh. The slats can be purchased separately, at a cost of $1-$2 or more per foot of fencing, or a chain link fence with built-in privacy or a fabric screen can cost $6-$40 a foot ($600-$4,000 for 100'; $1,800-$12,000 for 300') depending on the type of materials, whether installation in included, and the height, gauge and mesh of the fence.

[3] http://www.twpinc.com/wire-mesh-material/stainless-steel/16-mesh-t316-stainless-35

[4] https://www.onlinemetals.com/merchant.cfm?pid=2&step=4&showunits=inches&id=3&top_cat=1

    - Structural steel supports – $200
    - Labor to install – roughly equal to materials costs – $600
    - Total cost for each transfer point shroud – $1,200 capital, amortized to $180 per year
- Wind Screens for crushers, screening equipment, and loading and unloading facilities
    - Three-sided 4 ft. X 10 ft. stainless steel mesh for wind screen – $500
    - Structural steel supports - $400
    - Labor to install – roughly equal to materials costs – $900
    - Total cost for each transfer point shroud - $1,800 capital, amortized to $270 per year

Loading and unloading bulk materials usually involved a front-end loader or a clamshell style scoop. Wind screens are useful during these operations, but additional efforts are needed to control the dust during the drop of material from the front-end loader or clamshell. Dropping more slowly helps, but a delivery chute to control the fall of the material is very effective, combined with a shroud around the chute to protect it from wind. The following are the estimated costs for these facilities:

- Portable Solids Transfer Chutes and Shrouds
    - Very similar to wind screen for crushers and screening equipment, but must be portable to adjust to wind direction and loading requirements.
    - Cost of portable loading chute with adjustable base – $10,000, amortized to $1,500 per year.
    - Cost of shroud with portable base to shelter loading/unloading operations – $5,000, amortized to $750 per year.

Two other control methods are useful in preventing dust plumes – control vehicle traffic within the facility, and clean up any spills. The following are the estimated costs for these facilities:

- Truck Traffic Control
    - Signs restricting traffic to certain areas – less than $5,000 capital
    - Speed limit signs – less than $5,000 capital
    - Barriers to prevent erosion of bulk material into traffic lanes – less than $10,000 capital
    - Management time needed to enforce speed limits – normally no incremental costs.
- Bulk Material Spill Cleanup
    - Manual cleanup – $75/hour for worker and hand-tools. One hour per day, 200 dry workdays - $15,000 per year
    - Regenerative PM_{10} efficient street sweeper - $400,000 capital, amortized to $60,000 per year, plus $150,000 per year for fuel and operator.

Capital is amortized based on 7 percent interest, 15-year life, 1 percent taxes, 1 percent insurance, and typical 2 percent maintenance costs – resulting in an approximate15 percent annual cost of capital.

Estimated costs of water fog, and water misting systems is as follows:

- Water
    - Cost of water - $4-$7 per 100 cubic feet (758 gallons) equates to approximately $0.01per gallon
    - Water Mist systems (Micro-Cool) is an industrial version of those used to cool Palm Springs open air patios:

        - $15,000 for pump, filters and piping system
        - Plastic tubing to deliver mist to desired locations - $1,000
        - Portable water supply – 1-inch galvanized piping at $10 per foot[5] - $5,000
        - Amortized capital costs - $3,150 per year
        - Water use ~ 100 gallons per hour – say 60 hours per week, 52 weeks per year = 312,000 gallons per year at a cost of $3,120
        - Total costs to provide mist for a typical conveyor belt system - $6,270 per year
    - Water Fog systems for a stockpile
        - (Dust Boss, or Buffalo Monsoon) are large air blowers with air mist systems surrounding the flow of air:
        - $25,000 for pump, filters and piping system
        - Portable water supply – 1-inch galvanized piping at $10 per foot - $5,000
        - Amortized capital costs - $4,500 per year
        - Power – 5 HP - use 2 hours per day, 5 days per week, 52 weeks per year = 9,698 kWh = $2,242.50 per year
        - Water use ~ 20 gallons per minute – use 2 hours per day, 5 days per week, 52 weeks per year = 624,000 gallons per year at a cost of $6,240.00 per year
        - Total cost - $12,992.50 per year

For reference, below are estimated costs for the typical watering system currently used at most construction sites, landfills, and bulk material handling facilities:

- Water Spray systems for a stockpile
    - Similar to golf course sprinkler systems[6]
    - $15,000 for 150 feet of piping, 4 sprinklers, and controller
    - $10,000 for installation and infrastructure
    - Amortized costs - $3,750 per year
    - Water use approximately 10,000 gallons per day – 5 days per week, 52 weeks per year = 2,600,000 gallons per year at a cost of $26,000.00
    - Total cost - $29,7250 per year
- Firehose for watering specific locations
    - 1 ½" firehose – approximately 40 gpm[7]
    - Cost of firehose and nozzle – $300
    - Worker to direct the firehose – $25/hour, 2 hours per day, 5 days per week, 52 weeks per year = $13,000
    - Water use approximately 40 gallons per minute – use 2 hours per day, 5 days per week, 52 weeks per year = 1,248,000 gallons per year at a cost of $12,480 per year
    - Total costs – $25,480 per year
- Water truck for roads and can be used to water stockpiles:
    - Truck - $150,000 amortized to $22,500 per year
    - Truck operator and fuel – $75,000 per year
    - Water – 5,000-gallon truck, 2 deliveries per day to keep roadways stabilized – use 5 days per week, 52 weeks per year = 2,600,000 gallons per year at a cost of $26,000 per year

[5] http://www.discountsteel.com/items/Galvanized_Steel_Pipe.cfm?item_id=172&size_no=11
[6] http://store.rainbird.com/sprinklers.html?impact_inlet=166
[7] http://www.elkhartbrass.com/files/aa/downloads/catalog/catalog-f6-T.pdf

        - Total costs – $123,500 per year
- Dust Suppressants
    - Costs for surfactants are much higher than water.
    - However, surfactants are assumed competitive with water when the stockpile or disturbed area will be left stabilized for an extended period.

Attachment 2: Cost Estimates for Specific Facilities

Table 2-1: Estimated Cost of Bulk Material Handling Facilities controls

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
Granite Rock	MINERL> Storage, contained, Rock	Stone			Wind screen or shroud for storage PLUS Water mist system			
United States Pipe & Foundry	MTGL/SEC> Storage, Slag, 5 days/wk.	Slag			Wind screen for stock pile			
Berkeley Asphalt	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage			
Syar Industries, Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener			
Syar Industries, Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener			
Syar Industries, Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener PLUS Water mist system			
Syar Industries, Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener PLUS Water mist system			
PABCO Gypsum	MINERL> Grinding, Gypsum, 8 tons/hr max	Gypsum			Wind screen for grinder PLUS Water mist system			
ConAgra, Inc	FOOD/AG> Shipping & receiving	Wheat - grain			Wind screen or shroud for loading/unloading			
Granite Rock	MINERL> Storage, contained, Rock	Stone			Wind screen or shroud for storage			

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
CEMEX Construction Materials	MINERL> Screening, Rock, 340 tons/hr max	Stone			Wind screen for screener PLUS Water mist system			
CEMEX Construction Materials	MINERL> Mining/quarry, stockpiling	Stone			Wind screen for stock pile			
CEMEX Construction Materials	MINERL> Mining/quarry, Rock	Stone			Water fog system			
Hanson Aggregates	MINERL> Storage, open, Rock	Stone			Wind screen for stock pile			
Levin Richmond Terminal	MISC-HDLG> Material handling	Other Materials - other/not spec			Wind screen and shroud for handling			
Levin Richmond Terminal	MISC-HDLG> Material handling	Other Materials - other/not spec			Wind screen and shroud for handling			
Levin Richmond Terminal	MINERL> Storage, open, Multi-material	Coke			Wind screen for stock pile			
Levin Richmond Terminal	MISC-HDLG> Material handling	Iron ore			Wind screen and shroud for handling PLUS Water mist system			
Levin Richmond Terminal	MISC-HDLG> Material handling	Iron ore			Wind screen and shroud for handling PLUS Water mist system			
Levin Richmond Terminal	MINERL> Storage, open, Multi-material	Iron ore			Wind screen for stock pile			
Levin Richmond Terminal	MISC-HDLG> Material handling	Iron ore			Wind screen and shroud for handling			
Levin Richmond Terminal	MISC-HDLG> Material handling	Coke			Wind screen and shroud for handling			

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
Levin Richmond Terminal	MISC-HDLG> Material handling	Coke			Wind screen and shroud for handling			
Brenntag Pacific	MISC-HDLG> Storage, Potash, 5 days/wk.	Potash			Wind screen for stock pile			
Right Away Redy Mix	MINERL> Conveying, Gravel/sand	Sand/gravel			Wind screen for conveying and transfer points PLUS Water mist system			
Redwood Landfill	MISC-HDLG> Grinding, 80 tons/hr max	Wood - other/not spec			Wind screen for grinder PLUS Water mist system			
Superior Supplies	MINERL> Storage, contained, Concrete	Concrete			Wind screen or shroud for storage PLUS Water mist system			
Superior Supplies	MINERL> Storage, contained, Concrete	Concrete			Wind screen or shroud for storage PLUS Water mist system			
Soiland Co	MINERL> Mining/quarry, stockpiling	Stone			Wind screen for stock pile			
Hunt And Behrens	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points			
Hunt And Behrens	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points PLUS Water mist system			

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
Hunt And Behrens	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points PLUS Water mist system			
Hunt And Behrens	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points PLUS Water mist system			
Central Concrete Supply	MINERL> Loading/unloading, Concrete	Concrete			Portable shroud and chute for loading/unloading			
Central Concrete Supply	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage PLUS Water mist system			
Central Concrete Supply	MINERL> Conveying, Gravel/sand	Sand/gravel			Wind screen for conveying and transfer points PLUS Water mist system			
Marin Sanitary Service	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling PLUS Water mist system			
Syar Industries Inc	MINERL> Conveying, Rock, 160 tons/hr max	Stone			Wind screen for conveying and transfer points PLUS Water mist system			

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
Syar Industries Inc	MINERL> Loading, feed/surge/weigh bins	Sand/gravel			Wind screen and shroud for loading PLUS Water mist system			
Syar Industries Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener			
Syar Industries Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener PLUS Water mist system			
Syar Industries Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener PLUS Water mist system			
City of Berkeley, Dept. of Public Works	Misc. MINERL, 560 tons/hr max, 7 days/wk.	Waste material - other/not spec			Water fog system			
Sugar City Building Materials	Misc. MINERL, Gravel/sand	Sand/gravel			Wind screen and shroud for handling			
CEMEX Construction Materials	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage PLUS Water mist system			
CEMEX Construction Materials	MINERL> Concrete batching, Concrete	Concrete			Wind screen and shroud for handling PLUS Water mist system			
Davis Street SMART	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling PLUS Water mist system			

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
CEMEX Construction Materials	MTGL/SEC> Storage, Cement, 5 days/wk.	Cement			Wind screen and shroud for handling			
Langley Hill Quarry	MINERL> Mining/quarry, stockpiling	Stone			Wind screen for stock pile			
Langley Hill Quarry	Misc. MINERL, Rock, 200 tons/hr max	Stone			Water fog system			
CEMEX Construction Materials	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage PLUS Water mist system			
CEMEX Construction Materials	Truck Loadout	Sand/gravel			Portable shroud and chute for loading/unloading			
Oldcastle Precast (Pleasanton)	MINERL> Conveying, Cement	Cement			Wind screen for conveying and transfer points			
CEMEX Construction Materials	MINERL> Conveying, Gravel/sand	Sand/gravel			Wind screen for conveying and transfer points			
Hydro Conduit Corporation	Misc. MINERL, Gravel/sand, 20 tons/hr max	Sand/gravel			Wind screen and shroud for handling			
Associated Concrete Co	MINERL> Storage, contained, 35 min/batch	Cement - dry process mfg.			Wind screen or shroud for storage PLUS Water mist system			
Sonoma Compost	MISC-HDLG> Material handling	Fertilizer - other/not spec			Wind screen and shroud for handling			
Mission Trail Waste Systems	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling			

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
Vulcan Materials/Calmat Company	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage PLUS Water mist system			
Vulcan Materials/Calmat Company	MINERL> Screening, Rock, 407 tons/hr max	Stone			Wind screen for screener			
RC Ready Mix Co	MINERL> Storage, contained, Cement	Cement			Wind screen or shroud for storage			
Concrete Ready Mix, Inc	MINERL> Conveying, Concrete	Concrete			Wind screen for conveying and transfer points			
Willowbrook Feeds	FOOD/AG> Storage, Feed grains, 5 days/wk.	Grains - feed			Wind screen or shroud for storage			
Willowbrook Feeds	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points			
Willowbrook Feeds	FOOD/AG> Shipping & receiving	Grains - feed			Portable shroud and chute for loading/unloading			
Allied Waste Services of North	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling			
Right Away Redy Mix	MINERL> Storage, contained, Cement	Cement			Wind screen or shroud for storage PLUS Water mist system			
Feed Sources, Inc	FOOD/AG> Pressing, Barley, feed	Barley - feed			Wind screen for presser			
Soiland Co, Inc	MINERL> Mining/quarry, crushing, Rock	Stone			Water fog system, wind screen for crusher			
Quikrete Northern California	MINERL> Loading, feed/surge/weigh bins	Sand/gravel			Portable shroud and chute for loading/unloading			

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
Quikrete Northern California	MINERL> Loading, feed/surge/weigh bins	Sand/gravel			Portable shroud and chute for loading/unloading			
San Jose Concrete Pipe Co Inc	MINERL> Concrete batching, Gravel/sand	Sand/gravel			Wind screen and shroud for handling			
CEMEX Construction Materials	MINERL> Conveying, Limestone	Sand/gravel			Wind screen for conveying and transfer points			
Shell Chemical LP	MISC-HDLG> Material handling	Heterogeneous catalyst			Wind screen and shroud for handling			
Tyco Electronics Corporation	MISC-HDLG> Mixing, 4.5 min/batch	Other Materials - other/not spec			Wind screen for mixer PLUS Water mist system			
Central Concrete Supply, Inc	MINERL> Conveying, Gravel/sand	Sand/gravel			Wind screen for conveying and transfer points PLUS Water mist system			
BoDean Company	MINERL> Mining/quarry, stockpiling	Sand/gravel			Wind screen for stock pile			
Tesoro Refining & Marketing Co	MISC-HDLG> Material handling, Coke	Coke			Wind screen and shroud for handling PLUS Water mist system			
Napa Recycling & Waste Service	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling PLUS Water mist system			
Recall North America	MISC-HDLG> Material handling, Paper	Paper			Wind screen and shroud for handling PLUS			

Facility	Source	Material	Throughput Tons per year	PM_{10} Emissions lb per day	Recommended Controls	$ Capital	$ Annualized	Potential PM_{10} Reductions lb per day
					Water mist system			
CEMEX Pacific Holdings, LLC	MINERL> Loading, feed/surge/weigh bins	Sand/gravel			Wind screen for loading bins			
CEMEX	Wet Plant Aggregate bin system: 10 bins	Sand/gravel			Wind screen for bins			
South Bay Recycling, LLC (SBR)	Solid Waste Transfer Station	Waste material - other/not spec			Water fog system			
G3 Minerals, Byron Plant	Coarse Waste Sand Stockpile	Sand/gravel			Wind screen for stock pile			
G3 Minerals, Byron Plant	No. 1 Dryer Feed Bin	Sand/gravel			Wind screen for dryer			
G3 Minerals, Byron Plant	No. 2 Dryer Feed Bin	Sand/gravel			Wind screen for dryer			
G3 Minerals, Byron Plant	Quarry Operation	Sand/gravel			Water fog system			
Phillips 66 Carbon Plant	Portable Conveyor	Coke			Wind screen for conveying and transfer points			
Phillips 66 Carbon Plant	Portable Conveyor	Coke			Wind screen for conveying and transfer points			
Phillips 66 Carbon Plant	Stockpile Fugitive Emissions; Including All Transfers	Coke			Wind screen for stock pile			
					Totals	$1,722,600	$412,640	1,493.2 #/day

Staff expects only half of these potential control measures to be implemented, and expects to accrue only half of the emission reductions, based on some facilities and sources may be able to achieve the opacity limit currently, or through other minor improvements to their existing operation.

Expected capital investment for control measure to be approximately $866,000 capital, with resulting annual operating expenses of $206,000. Emission reductions are estimated to be 747 lbs per day of PM_{10}, or 136 tons per year. Average cost effectiveness is $206,000 / 136 = $1,515 per ton. The poorest cost effectiveness is found for two controls: $13,968 per ton for a water fog system at a quarry operation, and $10,303 per ton for a stockpile windscreen at a second quarry operation. These cost effectiveness levels are within normal acceptable ranges for particulate emission reductions.

Water Use

Five water fog systems are recommended in the table above. Each of these water fog systems is anticipated to use 624,000 gallons per year, totaling 3,120,000 gallons of incremental water use. Staff assumes all five will be installed.

Thirty-four water mist systems are recommended in the table above. Each of these water mist systems is anticipated to use 312,000 gallons per year, totaling 10,608,000 gallons of incremental water use. Staff assumes all 34 will be installed.

Total incremental water use for the proposed wind screens, and judicious use of water is 13,728,000 gallons per year, or 37,611 gallons per day.
Water is conservatively estimated to cost $7.48 per 100 cubic feet =748 gallons, equaling $0.01 per gallon.
13,728,000 gallons per year cost $137,280 per year

The CEQA threshold for housing development water use is based on water use needed for 500 dwelling units. Water use is estimated for 225 – 400 gallons per day for each dwelling unit, so the threshold ranges from 41,000,000 – 74,000,000 gallons of water.

The proposed particulate controls will use 33% of the CEQA threshold for incremental water use. If twice as many bulk material handling facilities opt to use water rather than wind screens, water use would be no more than 66% of the CEQA water consumption threshold

Typical urban water use is 8 million acre-feet of water per year = equaling 2.6 trillion gallons per year. 13.728 million gallons of proposed water use equals 5.3 millionths of the typical water supply. The threshold of 41 million gallons of water equals about 16 millionths of the typical water supply.

Attachment 1: Background Research on Bay Area PM Emissions

Attachment 1-1: 2011 Particulate Emissions Inventory[1] - tons per day

Source Categories	TSP	PM_{10}	$PM_{2.5}$
Petroleum Refining Subtotal	**0.38**	**0.27**	**0.16**
Other Industrial / Commercial Processes			
Chemical Manufacturing	0.43	0.39	0.38
Cooking	2.81	2.81	1.80
Other Food and Agricultural Processes	0.63	0.44	0.26
Metallurgical Foundries & Forging	0.98	0.61	0.46
Metal Recycling and Shredding	0.14	0.10	0.07
Wood Products Manufacturing	0.15	0.10	0.06
Cement Manufacturing	0.12	0.11	0.08
Asphalt Concrete Plants	0.55	0.22	0.18
Concrete Batching	1.21	1.11	0.75
Glass & Related Products	0.71	0.69	0.68
Stone, Sand & Gravel	0.86	0.43	0.06
Sand Blasting	0.35	0.17	0.01
Landfills	6.35	1.56	0.22
Waste Management - other	0.35	0.34	0.32
Other Industrial / Commercial	1.07	0.75	0.45
Subtotal	**16.71**	**9.83**	**5.78**
Combustion – Stationary Sources			
Domestic Combustion - space heating	0.70	0.70	0.70
Domestic Combustion - water heating	0.47	0.47	0.47
Wood Stoves	2.59	2.42	2.33
Fireplaces	8.88	8.31	8.00
Gas Turbines	0.89	0.88	0.88
Petroleum Refinery Combustion	2.51	2.51	2.45
Landfill Flares	0.11	0.11	0.11
Other Natural Gas Combustion	1.41	1.41	1.41
Planned Fires (prunings, crops, weeds, etc.)	0.32	0.29	0.27
Subtotal	**17.88**	**17.10**	**16.62**
Off-Road Mobile Sources			
Lawn & Garden Equipment - Gasoline	0.21	0.21	0.21
Refrigeration Units - Diesel	0.19	0.18	0.17
Agricultural Equipment - Diesel	0.33	0.32	0.31
Construction & Mining Equipment - Gasoline	0.11	0.11	0.11
Construction & Mining Equipment - Diesel	0.59	0.56	0.55
Industrial Equipment - Diesel	0.10	0.10	0.09
Light Commercial Equipment - Gasoline	0.34	0.34	0.34
Light Commercial Equipment - Diesel	0.34	0.32	0.31
Locomotive Operations - Diesel	0.20	0.20	0.19
Ships In Transit - Diesel	0.29	0.29	0.28
Ships In Transit – Fuel Oil	0.73	0.73	0.71
Commercial Harbor Craft	0.75	0.75	0.75
Recreational Boats - Gasoline	1.39	1.39	1.38
Commercial Aircraft	0.12	0.12	0.12
General Aviation Aircraft	0.14	0.14	0.14
Subtotal	**5.83**	**5.76**	**5.66**
On-Road Motor Vehicles			
Light Duty Passenger Vehicles - Exhaust	0.29	0.28	0.26
Light Duty Passenger Vehicles - Tire Wear	0.83	0.83	0.21

[1] Base Year 2011 Bay Area Emissions Inventory, August 2013

Light Duty Passenger Vehicles - Brake Wear	3.88	3.81	1.63
Light Duty Trucks I - Exhaust	0.09	0.09	0.08
Light Duty Trucks I - Tire Wear	0.10	0.10	0.02
Light Duty Trucks I - Brake Wear	0.45	0.44	0.19
Light Duty Trucks II - Exhaust	0.10	0.09	0.09
Light Duty Trucks II - Tire Wear	0.27	0.27	0.07
Light Duty Trucks II - Brake Wear	1.27	1.24	0.53
Medium Duty Trucks - Exhaust	0.09	0.08	0.08
Medium Duty Trucks - Tire Wear	0.20	0.20	0.05
Medium Duty Trucks - Brake Wear	0.94	0.92	0.40
Light Heavy Duty Trucks I - Exhaust	0.13	0.13	0.12
Light Heavy Duty Trucks I - Brake Wear	0.34	0.34	0.15
Medium Heavy Duty Trucks - Exhaust	0.67	0.67	0.62
Medium Heavy Duty Trucks – Brake Wear	0.31	0.30	0.13
Heavy Heavy Duty Trucks - Exhaust	1.60	1.60	1.47
Heavy Heavy Duty Trucks – Tire Wear	0.13	0.13	0.03
Heavy Heavy Duty Trucks – Brake Wear	0.23	0.22	0.09
Urban Buses - Exhaust	0.19	0.19	0.17
Urban Buses – Brake Wear	0.50	0.49	0.21
Other Buses - Exhaust	0.09	0.09	0.09
Subtotal	**12.70**	**12.51**	**6.69**
Miscellaneous			
Construction Operations - Residential	5.09	2.49	0.25
Construction Operations - Commercial	4.99	2.44	0.24
Construction Operations - Institutional	5.02	2.46	0.25
Construction Operations - Industrial	2.34	1.14	0.11
Construction Operations - Roads	6.00	2.94	0.29
Subtotal	**23.44**	**11.47**	**1.14**
Farming Operations - Land Preparation	2.27	1.03	0.15
Farming Operations - Harvest	1.21	0.55	0.08
Subtotal	**3.48**	**1.58**	**0.23**
Accidental Fires - structural	0.21	0.21	0.19
Accidental Fires - all vegetation	1.18	1.04	1.01
Subtotal	**1.39**	**1.25**	**1.20**
Entrained Road Dust – Paved Freeways	12.81	5.86	0.88
Entrained Road Dust – Paved Major Roads	15.49	7.08	1.06
Entrained Road Dust – Paved Collectors	3.13	1.43	0.21
Entrained Road Dust – Paved Local Streets	21.50	9.83	1.47
Entrained Road Dust – Unpaved Forest/Park Roads	5.95	3.53	0.35
Entrained Road Dust – Unpaved Farm Roads	0.54	0.32	0.03
Subtotal	**59.42**	**28.05**	**4.00**
Animal Waste - Dairy Cattle	1.07	0.52	0.06
Animal Waste - Range Cattle	1.80	0.87	0.10
Animal Waste - Broilers	5.05	2.43	0.28
Animal Waste - Layers	3.76	1.81	0.21
Animal Waste - Turkeys	2.43	1.17	0.13
Animal Waste - Sheep	0.92	0.44	0.05
Animal Waste - Horses	0.21	0.10	0.01
Animal Waste - Other	3.81	1.83	0.21
Subtotal	**19.05**	**9.17**	**1.05**
Wind Blown Dust - Agricultural Land	9.81	4.90	0.98
Wind Blown Dust - Other	0.59	0.35	0.05
Subtotal	**10.40**	**5.25**	**1.03**
Cigarette/Tobacco Smoking	0.61	0.54	0.52
Various other minor PM sources	2.91	2.85	2.23
Total	**174.20**	**105.63**	**46.31**

Note: Source categories shown with more than 0.10 tpd TSP emissions. Resulting sub-totals are slightly less than total PM emissions inventory.

Attachment 1-2: Significant PM Emissions Source Categories

A. Air District PM Emissions Inventory

The first step in developing the draft amendments was to identify PM source categories with the potential for significant emission reductions. Staff used the Air District's 2011 Emissions Inventory as the basis for this review. The 2011 Emissions Inventory provides a comprehensive estimate of the total amount of PM emitted within the Bay Area, sub-divided into estimates of Total Suspended Particulates (TSP), PM_{10}, and $PM_{2.5}$. The total estimated 2011 emissions are as follows:

TSP:	174 tons per day (tpd)
PM_{10}:	106 tpd
$PM_{2.5}$:	46 tpd

The Emissions Inventory breaks down the Bay Area's total PM emissions into multiple source categories. Staff reviewed each source category where PM emissions were estimated to exceed 0.1 tons per day. The contribution of each major grouping of source categories to total emissions of TSP, PM_{10}, and $PM_{2.5}$ are shown in Figures 1-2.1 through 2.3 below. These figures provide a graphic illustration of the contribution of each "Summary Category," or grouping of related source categories, to the region's PM emissions inventory.

Figure 1-2.1: 2011 Emissions Inventory – TSP Summary Categories

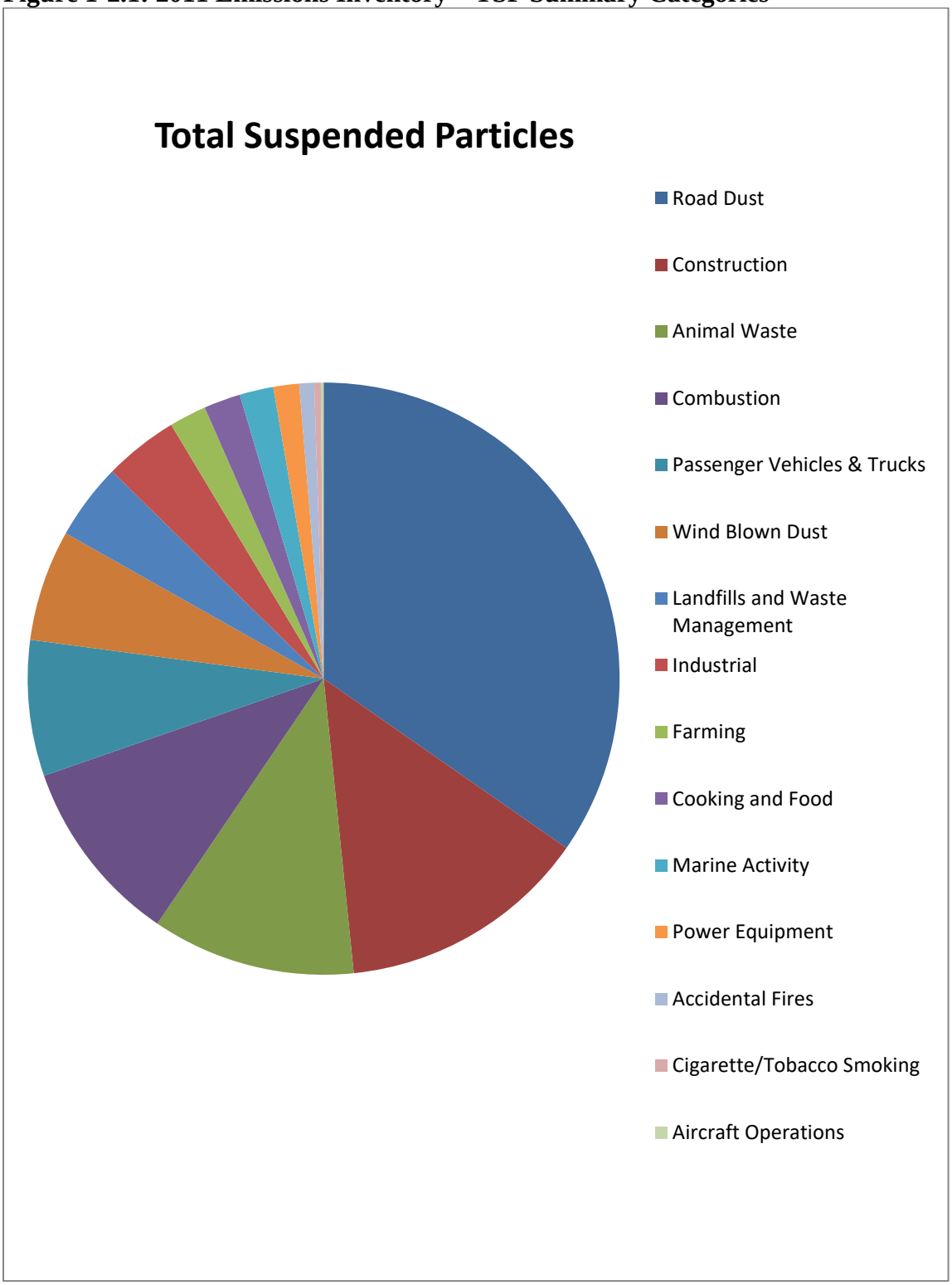
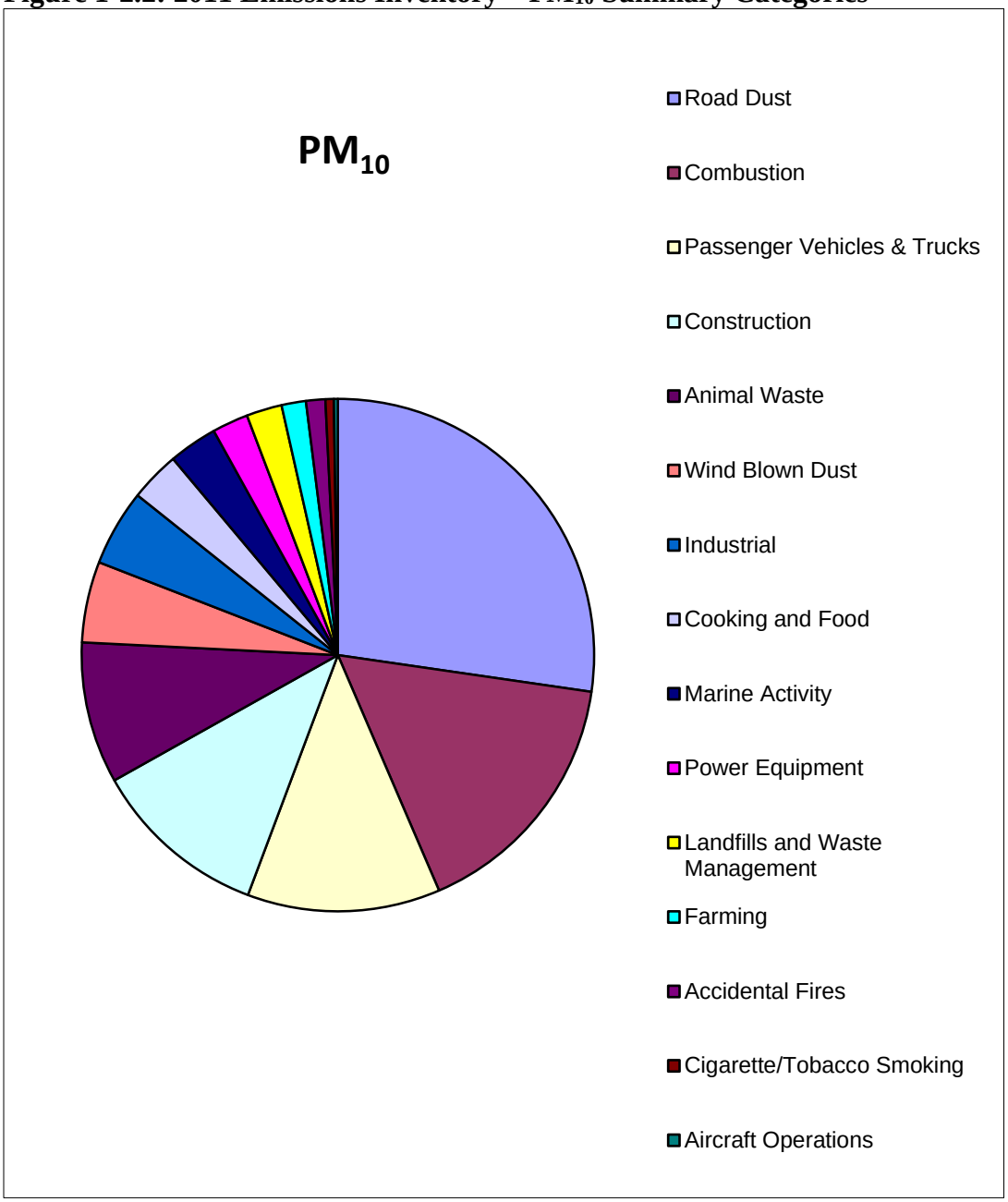


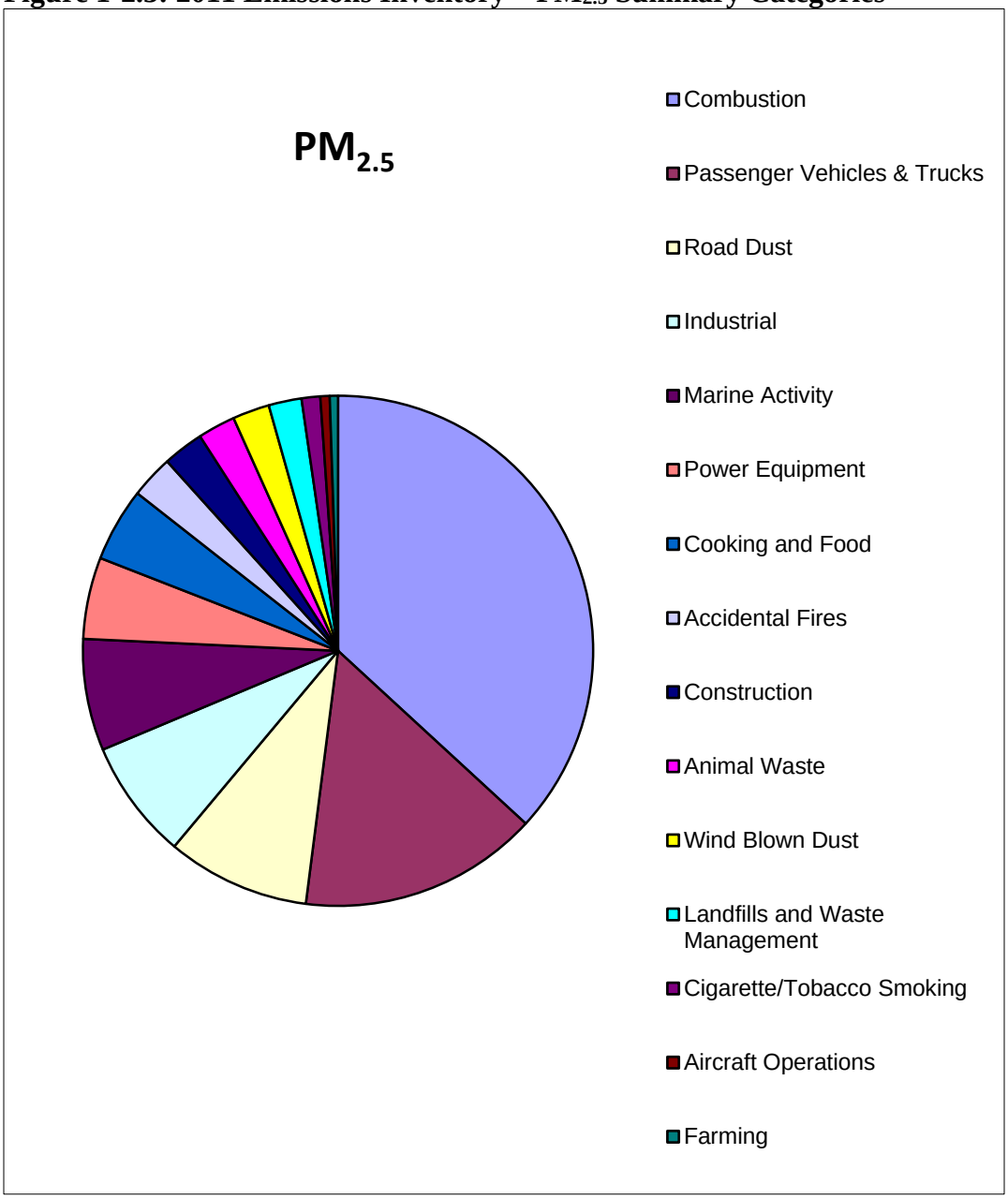
Figure 1-2.2: 2011 Emissions Inventory – PM_{10} Summary Categories



As these figures show, the conclusions for TSP (Figure 1-2.1) and PM_{10} (Figure 1-2.2) are similar - the most significant Summary Categories of emissions are the same six categories:

Summary Category	**% of Total TSP**	**% of Total PM_{10}**
Road Dust	34.7	27.3
Combustion of fuel from various sources	10.2	16.2
Passenger Vehicles & Trucks	7.4	12.2
Construction	13.7	11.2
Animal Waste	11.1	8.9
Wind Blown Dust	6.1	5.1

Figure 1-2.3: 2011 Emissions Inventory – $PM_{2.5}$ Summary Categories



The conclusions for $PM_{2.5}$ are somewhat different. The first three most significant $PM_{2.5}$ Summary Categories are the same as those for TSP and PM_{10}:

Summary Category	**% of Total $PM_{2.5}$**
Combustion of fuel from various sources	36.8
Passenger Vehicles & Trucks	15.2
Road Dust	9.1

However, the next three most significant $PM_{2.5}$ Summary Categories are:

Summary Category	**% of Total $PM_{2.5}$**
Industrial sources	7.6
Marine Activity	7.1
Power Equipment	5.2

B. PM Emissions from Combustion

As discussed above in describing PM controls, there are very few effective ways to control PM from natural gas or refinery fuel gas combustion. CARB has developed requirements for control of diesel fuel combustion. Control of jet fuel combustion is outside the authority of the Air District, since no gas turbines in the district currently burn liquid fuels. Control of PM from combustion of solid fuels (specifically petroleum coke) require site-specific analysis.

C. Identification of Source Categories with Potential for Significant PM Reductions

The purpose of draft rule amendments to Rule 6-1 is to significantly reduce PM_{10} and $PM_{2.5}$ emissions. The 2011 Emissions Inventory has been used as the basis for this analysis, and each source category with emissions of greater than 0.10 ton per day for TSP, PM_{10}, or $PM_{2.5}$ was considered. There are 88 source categories that capture 95 – 98 percent of total estimated PM emissions, and represent all significant emissions where reductions may be feasible.

Each of the 88 source categories are shown in Attachment 1. Draft amendments to Rule 6-1 are proposed for each source category where a significant quantity of emissions (especially $PM_{2.5}$) is emitted and where potential control can yield significant PM reductions. Several source categories are excluded from this rule development project based on the following criteria:

- There is a current rule in place for the source category, or other recent rule amendments that are not yet fully implemented; or
- Other rulemaking is currently underway or included in the 2017 Clean Air Plan; or
- The source category is outside of Air District jurisdiction; or
- No control methods are currently available that can have significant impact on emissions from the source category.

Future rulemaking to reduce PM emissions will reconsider these categories to identify the sources with greatest opportunity for improvement. Future PM rules will most likely be focused on specific source categories and specific sources, with specific control techniques and specific emission limits.

Twenty-two of the 88 source categories are being considered for possible control and emissions reductions. These categories include 43 percent of the total estimated PM_{10} emissions, and 19 percent of the total estimated $PM_{2.5}$ emissions. The largest of these categories are Construction Dust and Entrained Road Dust. Proposals to control Construction Dust and Entrained Road Dust (summarized as Fugitive Dust) were considered when developing the potential draft amendments for Rule 6-1.

Table 1-2.1: Source Categories considered for Rule 6-1 amendments

Source Category	PM_{10}	$PM_{2.5}$
Petroleum Refinery Processing[e]	0.27 tpd	0.16 tpd
Chemical Manufacturing	0.39	0.38
Other Food and Agricultural Processes	0.44	0.26
Wood Products Manufacturing	0.10	0.06
Asphaltic Concrete Plants	0.22	0.18
Concrete Batching	1.11	0.75
Glass & Related Products	0.69	0.68
Stone, Sand & Gravel	0.43	0.06
Landfills	1.56	0.22
Waste Management – other	0.34	0.32
Other Industrial / Commercial	0.75	0.45
Construction – 5 source categories	11.47	1.14
Entrained Road Dust – 6 source categories	28.05	4.00
Total:	45.82	8.66

[e] excluding refinery combustion

D. Source Categories Not Being Considered for Additional Regulatory Requirements

Of the 88 source categories identified in the 2011 Emissions Inventory with PM emissions of over 0.10 ton per day, only 22 are being considered for additional emissions controls. The other 66 were excluded from consideration for various reasons, as discussed below.

Six source categories have rules in place, or recent rule amendments (including state Air Toxic Control Measures) that are not yet fully implemented. These six categories are not currently being considered for potential amendments to Rule 6-1. Three of these source categories are significant sources of both PM_{10} and $PM_{2.5}$ emissions: cooking, wood stoves and fireplaces collectively represent 22 percent of the PM_{10} and 41 percent of the $PM_{2.5}$ emissions. The other three source categories have much lower emissions.

Table 1-2.2: Source Categories with existing or partially implemented rules

Source Category	PM_{10}	$PM_{2.5}$
• Cooking	2.81 tpd	1.80 tpd
• Sand Blasting	0.17	0.01
• Domestic Combustion – water heating	0.47	0.47
• Wood Stoves	2.42	2.33
• Fireplaces	8.31	8.00
• Gas Turbines	0.88	0.88
Total	15.06	13.49

Eight categories are not being considered for potential amendments to Rule 6-1 because they are addressed by new rules that have recently been approved, or are included in the stationary source measure in the 2017 Clean Air Plan. Some of these sources are currently regulated and the other sources are the subject of Further Study Measures currently included in the 2017 Clean Air Plan. Petroleum Refinery Combustion is also a significant

source of PM. Regulation 9, Rule 10 was recently amended to address these sources' NO_X emissions, and include a provision for CO monitoring as an indicator for complete combustion. Additional research is needed to better control PM emissions from refinery process gas combustion. These eight source categories represent five percent of the PM_{10} and nine percent of the $PM_{2.5}$ emissions.

Table 1-2.3: Source Categories with new rules recently approved, or included in the 2017 CAP

Source Category	PM_{10}	$PM_{2.5}$
• Metallurgical Foundries and Forging	0.61 tpd	0.46 tpd
• Metal Recycling and Shredding	0.10	0.07
• Cement Manufacturing	0.11	0.08
• Domestic Combustion – space heating	0.70	0.70
• Petroleum Refinery Combustion	2.51	2.45
• Planned Fires (prunings, crops, weeds)	0.29	0.27
• Animal Waste - Dairy Cattle	0.52	0.06
• Animal Waste - Range Cattle	0.87	0.10
Total	5.71	4.19

Thirty-eight source categories are not within the jurisdiction of the Air District, so are not being considered for potential amendments to Rule 6-1. These 38 source categories represent 18 percent of the PM_{10} and 28 percent of the $PM_{2.5}$ emissions.

Table 1-2.4: Source Categories outside the jurisdiction of the Air District

Source Category	PM_{10}	$PM_{2.5}$
• Lawn & Garden Equipment	0.21 tpd	0.21 tpd
• Refrigeration Units – Diesel	0.18	0.17
• Agricultural Equipment - Diesel	0.32	0.31
• Construction & Mining Equipment – Gasoline	0.11	0.11
• Construction & Mining Equipment – Diesel	0.56	0.55
• Industrial Equipment – Diesel	0.10	0.09
• Light Commercial Equipment – Gasoline	0.34	0.34
• Light Commercial Equipment – Diesel	0.32	0.31
• Locomotive Operations – Diesel	0.20	0.19
• Ships in Transit – Diesel	0.29	0.28
• Ships in Transit – Fuel Oil	0.73	0.71
• Commercial Harbor Craft	0.75	0.75
• Recreational Boats – Gasoline	1.39	1.38
• Commercial Aircraft	0.12	0.12
• General Aviation Aircraft	0.14	0.14
• Light Duty Passenger Vehicles – Exhaust	0.28	0.26
• Light Duty Passenger Vehicles – Tire Wear	0.83	0.21
• Light Duty Passenger Vehicles – Brake Wear	3.81	1.63
• Light Duty Trucks I – Exhaust	0.09	0.08
• Light Duty Trucks I – Tire Wear	0.10	0.02
• Light Duty Trucks I – Brake Wear	0.44	0.19

• Light Duty Trucks II - Exhaust	0.09	0.09
• Light Duty Trucks II – Tire Wear	0.27	0.07
• Light Duty Trucks II – Brake Wear	1.24	0.53
• Medium Duty Trucks - Exhaust	0.08	0.08
• Medium Duty Trucks – Tire Wear	0.20	0.05
• Medium Duty Trucks – Brake Wear	0.92	0.40
• Light Heavy Duty Trucks I - Exhaust	0.13	0.12
• Light Heavy Duty Trucks I – Brake Wear	0.34	0.15
• Medium Heavy Duty Trucks - Exhaust	0.67	0.62
• Medium Heavy Duty Trucks – Brake Wear	0.30	0.13
• Heavy Heavy Duty Trucks - Exhaust	1.60	1.47
• Heavy Heavy Duty Trucks – Tire Wear	0.13	0.03
• Heavy Heavy Duty Trucks – Brake Wear	0.22	0.09
• Urban Buses – Exhaust	0.19	0.17
• Urban Buses – Brake Wear	0.49	0.21
• Other Buses – Exhaust	0.09	0.09
• Cigarette/Tobacco Smoking	0.54	0.52
Total	**18.81**	**12.87**

Staff proposes omitting fourteen source categories from consideration for possible control and emission reductions. Staff is not considering these source categories based on:

i) their current emissions are relatively small,
ii) current rulemaking will provide a basis for future work (regarding control of PM from dairy cattle / range cattle on other types of animals),
iii) additional study is needed to address farming operations, or
iv) control techniques are not currently available to address these categories.

These 14 source categories represent 17 percent of the total PM_{10} and 11 percent of the total $PM_{2.5}$ emissions.

Table 1-2.5 – Source Categories with relatively small PM emissions, without practical controls, or where current work will help develop future control strategies

Source Category	PM_{10}	$PM_{2.5}$
• Landfill Flares	0.11 tpd	0.11 tpd
• Other Natural Gas Combustion	1.41	1.41
• Farming Operations – Land Preparation	1.03	0.15
• Farming Operations – Harvest	0.55	0.08
• Accidental Fires – structural	0.21	0.19
• Accidental Fires – all vegetation	1.04	1.01
• Animal Waste – Broilers	2.43	0.28
• Animal Waste – Layers	1.81	0.21
• Animal Waste – Turkeys	1.17	0.13
• Animal Waste – Sheep	0.44	0.05
• Animal Waste – Horses	0.10	0.01
• Animal Waste – Other	1.83	0.21
• Wind Blown Dust – Agricultural Land	4.90	0.98

• Wind Blown Dust – Other	0.35	0.05
Total	**17.38**	**4.87**

Combustion sources of all types are a cumulative large source of particulates, yet each individual source is a relatively small source of particulate matter. Combustion is a large contributor to the generation of fine PM. Particulates emissions from diesel and fuel oil combustion are common and readily visible. Combustion of natural gas can create ultrafine PM in addition to the small amounts of larger PM. Gas turbines that burn natural gas have been source tested often, and most of the time very little PM is found due to the large volume of exhaust flow. Emission rates of $PM_{2.5}$ can be significant even when the PM concentration is very dilute. Source test results for these sources indicate PM emissions are 0.0006 grains PM_{10}/dscf or lower. The control technology used for this type of source is "good combustion practice," which means ensuring that combustion is as complete as possible. Low CO concentrations in flue gas are an indication of complete combustion. There are no practical controls to reduce particulates beyond "good combustion practice" available for these stationary sources. The 2017 Clean Air Plan stationary source control measure entitled "combustion strategy" will review all sources of combustion with the intent of identifying efficiency measures that will reduce the amount of fuel consumed, and will also consider impact on neighbors.

Attachment 1-3: Analysis of Potential PM Controls on Affected Facilities

A. Source Categories Identified for Potential Emission Reductions Through PM Controls

Twenty-two source categories were reviewed as initial steps to reduce PM emissions. In those 22 source categories there are 2455 permitted stationary sources with particulate matter emissions. These sources were screened to focus on the largest of these facilities, 55 of which have more than 90 lb/day of particulate emissions. These 55 large sources represent slightly more than 2.2 percent of the permitted sources and approximately 85 percent of the total emissions from these categories.

Facilities in some of these 22 source categories may be affected by the more stringent TSP concentration and mass emissions limits. Staff visited each of these 55 facilities to assess the current situation, and understand what impact PM controls would have on these operations. Background information and potential for reduced PM emissions are discussed for each of these categories below. These assessments provide the basis for estimated PM emissions reductions, and estimated costs for these facilities to comply with the draft amendments.

Basic Refining Processes

Four of the large sources of PM are refinery fluid catalytic cracking (FCC) units. Flue gas from the regenerator contains catalyst dust, and is controlled with cyclones and electro-static precipitators (ESP) to limit particulate emissions. These refining processes and the associated control equipment are very sophisticated, and they currently achieve relatively low emissions of filterable PM (typical filterable PM concentrations range from 0.001 – 0.01 grains of PM/dry standard cubic foot).

These sources also contain condensable PM and ammonia, which is a PM precursor. Regulation 6, Rule 5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units was recently adopted to address the ammonia emissions and optimize ammonia levels in the effluent to minimize particulate emissions from the ESP's.

These facilities are already equipped with Best Available Control Technology for the solid (filterable) particulates. Implementation of Rule 6-5 will address the condensable particulates. No other general or source specific regulations are recommended at this time.

Chemical Manufacturing

One of the large sources of PM in the Bay Area is a petroleum coke calciner. Particulate emissions come from the transportation and storage of green coke, the calcining process, and storage and transportation of the calcined coke product. The primary opportunity for improvement appears to be control of fugitive dust from the storage and handling of the calcined coke product. Regulation 9, Rule 14: Petroleum Coke Calcining Operations was

recently adopted to address significant SO_2 emissions, which is a PM precursor. In addition, Rule 9-14 directly addresses particulate matter emissions by requiring a dust control plan, so this facility is exempted from the draft proposed new requirements.

One of the large sources of PM is a facility that manufactures catalysts used in oil refining. These catalysts are made from alumina powder that is shipped in by rail. The manufacturing facility is contained within buildings, and has baghouses on the process drying streams and on the ventilation from each of the buildings. There does not appear to be significant opportunity for additional cost effective emission reductions at this time.

Other Food and Agricultural Processes

Two large facilities make salt. Salt dust is contained by ducting surrounding the solids handling systems, and wet mechanical scrubbers (known as roto-clones) are used to control salt emissions. There are several baghouses and one water scrubber used as control devices as well. Wet mechanical scrubbers have relatively poor control effectiveness, but since salt particles are absorbed by the body, these particles may not create the same health impacts as other fine particulates. The Morton Salt Material Safety Data Sheet shows no specific health impacts from exposure to salt dust emissions. Staff recommends an exemption from more stringent PM requirements for salt manufacturing.

One large facility is a sugar refinery. Their solids handling processes are abated with wet mechanical scrubbers, and baghouses. One system uses char to absorb color bodies from the raw sugar, and is abated with a baghouse. There does not appear to be significant opportunity for additional cost effective emission reductions at this time. Staff considered providing an exemption for sugar manufacturing similar to salt manufacturing. However, the National Institute for Occupational Safety and Health (NIOSH) recommends no more than 5 mg/m^3 of exposure to sugar dust, so the limited exemption was not included in the rule language. Source test studies for this facility show their emissions are well below the more stringent emission limits proposed in the amendments to Rule 6-1.

One of the large sources is a flour mill. The facility currently produces 1,000,000 lbs. of flour per year, and is in the process of expanding production. They have an extensive system of baghouses and are upgrading the baghouses involved in the expansion as required by Regulation 2, Rule 2. The expanded facilities must meet Best Available Control Technology (BACT) requirements. The facilities current emission limits are 0.02 gr/dscf, and new permit requirements for the expansion will reduce emission limits to the 0.002 – 0.004 gr/dscf range. Staff recommends no further analysis of flour manufacturing at this time, as there does not appear to be significant opportunity for additional cost effective emission reductions.

One large facility is a coffee roaster. There are many cyclone and baghouse combinations for bean and ground coffee handling. The coffee roasting is abated for NO_X and hydrocarbons, but is not abated for PM. There have been several source tests conducted on the coffee roasters – indicating PM emissions are 0.012 gr/dscf totaling approximately 0.2 lb/hr, with an additional 0.014 gr/dscf of condensable PM (also approximately 0.2 lb/hr). Staff recommends no further analysis of coffee roasting at this time, as there does not appear to be significant opportunity for additional cost effective emission reductions.

Two large facilities produce livestock feed from various grains. One facility has baghouses to control the grain conveyors and elevators, and the hammer-mill for grinding the grain. The other facility has cyclones to control these types of sources. The cyclones at the second facility are quite old, and estimated to be only 65 percent efficient. Since these cyclones are much less efficient than baghouses, this facility may be an area of opportunity for improvement. However, secondary abatement is seldom cost effective since more than half of the PM emissions are already removed by the cyclones. The grain unloading areas in both facilities are uncontrolled, although the dusting is relatively minor and occurs only during interim periods when the grain initially falls from the truck into the pit. Compliance testing requirements in draft amendments to Rule 6-1 will identify if further controls are needed for either of these facilities.

Asphaltic Concrete Plants

Five of the large facilities produce asphaltic concrete for road paving. The process for handling and drying aggregate for use in asphalt is controlled, including NO_x controls for the drier and a baghouse to control PM from the drier, handling and storage systems. The area of opportunity for asphaltic concrete facilities is where significant clouds of "blue smoke" occur each time a batch of asphalt mix is delivered from the storage bin into a delivery truck (called load-out). This smoke appears to be vaporized and possibly partially oxidized asphalt. The asphaltic concrete mixture for Warm Mix asphalt is kept at 235 – 275°F in storage, and is hot enough to create this "blue smoke" plume when dropped from the storage vessel into the truck. The asphaltic concrete mixture for Hot Mix asphalt is kept at 300 – 325°F in storage, and makes significantly more "blue smoke." The volume of the plume can be minimized by reducing the free-fall distance into the truck and possibly using a delivery chute.

The California Department of Transportation (CALTRANS) at times requires paving with "rubberized" asphalt. This rubberized asphaltic concrete includes crumb rubber from recycled tires. Rubberized asphaltic concrete is applied at temperatures from 325 – 375°F. These higher temperatures can cause sulfur in the crumb rubber to evolve as hydrogen sulfide (H_2S), an odorous chemical (smells like rotten eggs). In addition, the resulting asphalt mix is in the 300 – 325°F range, and creates significant quantities of "blue smoke."

"Blue smoke" abatement is installed on two of the five large facilities, and currently being added to a third facility. These systems include an enclosure around the truck-loading ramp, and use an induced draft fan to draw air surrounding the loading zone into an abatement device. This control system is estimated to capture 90 percent of the "blue smoke", and routes it to a filtration system that is estimated to recover 85 percent of the vaporized oil. While this appears to be an area of opportunity for asphalt concrete mix plants, the existing blue smoke abatement systems collect very little material. The blue smoke is deceiving – although it appears to be a significant volume of smoke, there are very few pounds of particles collected. Some blue smoke abatement systems only require cleaning monthly. Based on existing examples of blue smoke abatement, it does not appear to be cost effective to require installation of this equipment at these facilities to remove the minor amounts of $PM_{2.5}$ at this time.

An additional concern is that this blue smoke can occur a second time when the truck delivers its load of asphaltic concrete to the paver at the jobsite. The cloud of blue smoke

at the jobsite is usually much smaller because the asphaltic concrete is generally delivered by sliding the asphalt mix from the dump truck into the paver in a slower and more controlled manner. There does not appear to be a feasible method to control blue smoke at the paving jobsite.

Blue smoke also occurs when an asphaltic surface treatment (generally known as chip-seal paving) is used to seal cracks on an existing paved road, or when layered with fine aggregate to form a roadway that normally sees very low volume of motor vehicle traffic. Blue smoke occurs when hot liquid asphalt is sprayed on an existing paved roadway or aggregate. The cloud of blue smoke at the jobsite can be significant when the hot liquid asphalt includes recycled rubber. Abatement is currently available – a portable modular system similar to the blue smoke abatement systems used at asphalt plants. These systems include an enclosure around the liquid asphalt spray nozzles, and an induced draft fan to draw significant quantities of air surrounding the spray zone into an abatement device. This approach is estimated to capture 85 percent of the "blue smoke," and routes it to a filtration system that is estimated to recover 85 percent of the vaporized oil. This also appears to be an area of opportunity to reduce PM emissions, but the amount of asphalt recovered is very small, so staff does not recommend blue smoke abatement at this time.

Additional analysis of possible toxic impacts of blue smoke will be considered in future Health Risk Assessments of these sources.

Roofing Asphalt

Roofing asphalt is an area with potential for emission reductions. Roofing asphalt is typically heated to 450 – 500°F in small heating units called asphalt kettles, and pumped to the roof. Smoke and odors can emanate from the kettle (particularly if the asphalt is overheated), and from the asphalt as it is spread on the roof. Smoke and odors also occur when the kettle is opened to add additional asphalt. One manufacturer of roofing asphalt has now added a polymer that forms a skim-layer on the surface of the hot liquid asphalt in the kettle, and has been shown to reduce smoke and odors by up to 80 percent. This product, known as low-fuming roofing asphalt, appears to be an improvement in worker exposure to fumes, as well as a reduction in PM emissions and odors.

During the workshop process, staff received feedback that low-fuming roofing asphalt is available from only one supplier. Other suppliers provide a low-odor roofing asphalt, but the additive is only an odorant to make the fumes smell better, not reduce the evolution of the hot roofing asphalt fumes. In addition, the cost of low-fuming asphalt was found to be significantly more expensive (incremental $5 – 10 per 100 lb. plug) than anticipated. Low-fuming roofing asphalt no longer appears to be a cost-effective method to control roofing asphalt fumes.

The draft new regulation to address roofing asphalt is being withdrawn, and further study is needed to identify additional options for control of roofing asphalt.

Concrete Batching

Two of the large facilities are concrete batch mix plants. The cement and aggregate flow through a cylindrical chute into the receiving hopper on a delivery truck. An induced draft

fan is often used to draw air surrounding the loading zone into an abatement device. This approach is estimated to capture 90 percent of the cement and aggregate dust, and routes it to a baghouse that is estimated to recover 99 percent of the dust. Plastic flexible shrouds are often positioned around all four sides of the delivery chute to protect the delivery from the wind. Water is often sprayed on the outside of the shrouds to control any dust that may escape the induced draft fan suction during the delivery. Staff recommends no further analysis of concrete batching operations at this time, as there does not appear to be significant opportunity for additional cost effective emission reductions.

Glass & Related Products Manufacturing

One large facility is a glass recycling facility, that receives glass, sorts it into specific colors and types, and then delivers it to glass manufacturing facilities. Glass comes in via trucks and rail cars. The glass is dumped into piles, scooped up with a large front-end loader, and fed into a hopper / crusher / screening process. Plastic bottles and aluminum cans are removed by hand. A magnet is used to remove trash metals. Water sprays are used for abatement of the conveyors. Baghouses are used for abatement of the recycled glass loaded into trucks for delivery. Occasionally recycled glass is loaded directly into trucks using a large front-end loader. There does not seem to be a significant area of opportunity for additional cost effective emission reductions at this time because there is relatively little dust coming from the transportation and storage of the broken glass.

One facility manufactures fiberglass for insulation. Delivery trucks drop recycled glass into a hopper where it is conveyed to a storage silo. The entire recycled glass supply operation is abated with an induced draft fan and baghouse. Glass is melted with a "cold top" electric arc furnace. There appears to be very little PM emissions from this furnace. Molten glass is then spun into fiberglass abated by large induced draft fan and cyclones. Source test information finds the PM emissions from these sources range from 0.01 – 0.04 grains/dry standard cubic foot, and two to eight lbs/hr from each of four parallel fiberglass spinning heads. This spinning process seems to be a source of very fine (0.1 – 1.0 microns) particulates. The facility's corporate engineering group believes the $PM_{2.5}$ comes from volatilization of the molten glass during the spinning process. They have installed electrostatic precipitators (ESP's) at other corporate locations, and find them to be only 50 – 80 percent effective. Their cyclones could be upgraded to include baghouses or an ESP, but control efficiency is uncertain until particle size distributions are more clearly defined. The fiberglass is then coated with a binder, and this binder is a large source of PM emissions. A recent source test measured about 450 lbs. of PM_{10} per day (including condensable PM). However, this facility is in the process of converting to a different binder, so modification of their permit will drive any improvements needed to achieve BACT controls on the binder coating system. The fiberglass is cooled, formed into mats, and cut into finished sizes, all abated with induced draft fans, cyclones and high efficiency air filters. Source-specific rule making will be needed to address the very fine particulate matter coming from the fiberglass spinning process.

One facility manufactures glass containers; however, this facility is no longer a concern because it has recently shut down operations.

Stone, Sand & Gravel

Nine of the large facilities are rock quarries. In general, staff observed that those quarries that made efforts to control dust did a good job of preventing significant dust plumes. On the other hand, those quarries that made little or no effort to control dust had visible dust plumes from crushers, conveyors, stockpiles, and from vehicles on the unpaved roads.

The source and quality of rock from a quarry can vary significantly, so the final products and uses vary as well. However, most quarries have a similar production process: blasting, scooping up the rock with large front-end loaders, crushing the rock, transporting the rock via conveyors, screening the rock into various sizes, additional crushing if necessary, and conveying the various sized rock products to storage piles. Blasting at a quarry creates a significant plume of dust. If the wind is still, this dust can linger for quite some time. If the wind is strong, the wind can carry this dust off-site, and create a nuisance for neighbors. No pre-watering or other methods appear to be practical to prevent or control dust from blasting. Some quarries have a water wash facility to rinse dirt and sand from the various aggregate products.

Most quarries use water sprays as their only dust mitigation strategy. They spray water on the crushers and conveyors, and on the product stockpiles to control dust. Water fog and water misting systems are much more effective because they produce small water droplets that contact the small dust particles more effectively. Some water sprays appeared to be effective, while others needed additional spray nozzles or more regular maintenance of the existing spray nozzles. Almost all quarries load the finished product into trucks with a front-end loader. Loading the finished products into trucks can be a significant source of dust, depending on the time and care used in depositing the rock or aggregate into the truck. Those operators that drop the entire load into a truck quickly from a height of two to three feet create a significant dust plume. Those that slowly and gently slide the load of rock into the truck from a height of no more than one to two feet create a much more modest dust plume. A separate rulemaking for controlling fugitive dust from quarries and other facilities that store and handle bulk materials is being proposed.

Truck traffic on unpaved roads within a quarry can also be a significant source of PM emissions. Most quarries spray water on their unpaved roadways to prevent dust. However, water on unpaved roads can create mud that adheres to the truck tires and truck body, resulting in mud deposits on the paved roads at the exits from these quarries. This mud is known as “trackout” because the trucks and truck tires “track out” mud onto the paved roads. Most quarries have a set of widely spaced bars (known as “grizzlies) near the quarry exit that are designed to knock mud off the trucks, and flex the tire treads to be sure no mud adheres to the tire treads, thus preventing “trackout” onto the public roadway. These grizzly bar systems must also have a place to collect the mud, and the mud must be removed regularly to prevent it from building up to the point where it renders the system ineffective. Some quarries have truck wash stations to clean the trucks and wash mud from the tires before they leave the facility. Trackout can become a significant fugitive dust problem when allowed onto the public roads adjacent to the quarry. The mud can dry into fine silt and local traffic can entrain (and re-entrain) the silt into a localized dust plume. A separate rulemaking for prohibition of trackout will require about one-third of all quarries to improve control of trackout.

Landfills and Other Waste Management

Twelve landfills in the Bay Area are large sources of PM. Similar to quarries, staff observed that the landfills that made efforts to control dust did a good job of preventing significant dust plumes. On the other hand, those landfills that made little or no effort to control dust had visible dust plumes from vehicles on the unpaved roads.

Landfill particulate matter emissions parallel the emissions from construction sites and rock quarries. In addition, landfills may have a variety of other operations including tire recycling; paper, wood, plastic and glass recycling; and green waste recycling. Minor sources of dust are:

- dumping of municipal waste, and construction/demolition debris;
- cuts made in other parts of the landfill to provide cover soil;
- transfer and sorting of recyclables;
- recycling of concrete; and
- recycling and chipping wood.

Most landfills currently have stringent permit conditions in place to control PM emissions. The vast majority of dust at a landfill comes from vehicle traffic. All roads and the area next to the active fill site are normally kept wet to minimize fugitive dust. Landfill sites often use their own leachate as the water source for keeping the roads and active fill site wet. This leachate can have odor issues at times, but it seldom seems to create an odor problem when used to wet the landfill gravel and dirt roads. Landfills also have issues with "trackout" of mud that can accumulate on trucks from the wet gravel and dirt roads. Most landfills have a truck grizzly bar / rumble strip facilities to prevent trackout onto the public roadways. Some facilities have truck wash stations, and others have long paved roads that they either wash down or attempt to keep clean with street sweepers. The primary opportunity for cost effective emissions reductions appears to be more disciplined prevention of trackout onto public roads.

In addition, five other locations in the category of "other" waste management appear to be large sources of PM emissions. These are waste transfer stations, where waste is segregated into various recyclables: green waste, plastic, paper, wood, metals, tires, and concrete for example. Again, PM emissions come primarily from handling of the waste as it is separated into the various recycle streams, and from truck traffic in and out of the facility. Water spray from permanent spray nozzles, or manually from a fire hose is used to wet the waste before it is transferred to a conveyor belt for sorting. Fresh water or reclaimed water is normally used for these water sprays. Water fog or water mist systems are far more effective and use less water. Water sprays appear to be effective, and no significant PM emission reductions are expected. Water is used to control road dust on paved roads and any gravel roads at each facility. Trackout is generally less of a problem at waste transfer stations because most of the roadways are paved. Staff recommends no further analysis of other waste management operations at this time, as there does not appear to be significant opportunity for additional cost effective emission reductions.

Other Industrial & Commercial Processes

There are three gypsum related facilities in the Bay Area. Gypsum is used in fertilizer,

cement manufacturing, and is the primary component of wallboard. Gypsum is a soft, powdered mineral salt that is mined and transported as a dry material, and dust from gypsum is approximately 90 percent PM_{10}, and nearly 50 percent $PM_{2.5}$.

One of the facilities receives gypsum, conveys it to a large storage pile, and loads it into trucks as supply to a cement manufacturing facility. This facility has a baghouse on the receiving system, and water sprays on the conveyor system. The primary area of opportunity for cost effective emission reductions is fugitive dust from traffic in the area, particularly with a large skip loader used to load gypsum into the product delivery trucks. A second facility receives gypsum, conveys it to a large storage pile, and manufactures wallboard. This facility has baghouses on the gypsum receiving and storage facility, on the crushed gypsum and conveyor to the wallboard plant, and on the gypsum calcining operation within the plant. The area of opportunity for emission reduction is concentrated on fugitive dust from a recycled gypsum storage pile and the truck traffic within the facility. These two gypsum facilities will be affected by the draft rule for bulk material storage and handling.

A third facility manufactures the paper tape used to join and smooth out the interface between two sections of wallboard. This facility generates PM from the mechanical process used to texturize the paper tape so the wallboard joint compound will adhere to the paper tape. This facility has a cyclone to capture the paper dust created by texturizing the paper tape. A baghouse can provide more effective control than a cyclone, so there is an opportunity for reducing emissions by adding a baghouse to the discharge from the cyclone. The discharge of the cyclone appears clear with little residue on the discharge ducts, so no additional controls may be warranted. There are no source tests on this emission point, so the compliance testing required in the draft amendments to Rule 6-1 will determine whether this facility needs to install better control equipment.

Bay Area Rapid Transit Car Cleaning Facilities

Bay Area Rapid Transit (BART) has four maintenance yards that each have BART car cleaning facilities. Particulate matter from rail wear, electric motor wear, and brake pad wear accumulate under the BART cars, and can be emitted to the air during the cleaning process. These cleaning facilities are enclosed, and abated with wet mechanical scrubbers (roto-clones) that seem to work effectively – there is no tell-tale dust or stain on the discharge of the scrubbers. However, emissions from each of these wet scrubbers were incorrectly estimated to be more than 200 lb/day, so staff identified these facilities as an area of opportunity for PM controls. The actual emissions are much lower, so additional controls such as a baghouse or a wet electrostatic precipitator are not cost effective.

BART also has a rail-grinding car that is designed to smooth out the system's rails. This rail-grinding car has an induced draft fan to capture rail dust, and a baghouse to control the discharge of the fan. It appears to work effectively, and does not appear to have much potential for cost effective emission reductions.

Contra Costa County Sanitary District

The Contra Cost County Sanitary District has a sewage treatment facility in Martinez that incinerates solid sludge. It is currently equipped with a wet scrubber to control particulate

emissions. Source tests indicate this wet scrubber is effective most of the time, but occasionally the test results could exceed the more stringent limits included in the amendments to Rule 6-1. Staff from the Contra Costa County Sanitary District indicate that they intend to upgrade these wet scrubbers with more effective scrubbers, with the potential to include a wet Electro Static Precipitator (ESP) and a chloride removal system to address Toxic Air Contaminant (TAC) emissions. Installation of these enhanced controls is not cost effective for the relatively small PM emission reductions that can be gained.

CCC Sanitary District is part of a Publicly Owned Treatment Works group that has indicated they need 6 years to budget, fund, design, procure, construct and startup abatement equipment. Accommodation for this extended time period is included in the proposed amendments to Rule 6-1.

Smaller Sources

The remaining 2,400 permitted stationary sources emit significantly less than 90 pounds per day. They collectively account for the remaining 15 percent of the total emissions of the 22 source categories that are being considered for this first phase of PM emission reductions. They represent an array of sources similar to the larger stationary sources - just lower in emissions. Staff will work with these smaller sources during the workshop phase of the rule development process to discover any unique specific issues that may be raised by these smaller sources.

Construction Operations (Residential, Commercial, Institutional, Industrial, and Roads)

Construction is a large source of fugitive dust, and provides a significant opportunity for emission reductions. Construction dust is currently limited by the visible emission standard in Rule 6-1; and Air District Rule 11-14, Asbestos-Containing Serpentine and the California Air Resources Board Air Toxic Control Measures limit construction operations involving naturally occurring asbestos (known as serpentine rock) for Surfacing Applications and for Construction, Grading, Quarrying, and Surface Mining Operations. Construction dust is also limited by the Regional Water Quality Control Board requirements for Storm Water Pollution Prevention Plans (SWPPP). SWPPP's are required for any construction site over 1 acre.

PM emissions from construction operations are separated into five different categories in the emission inventory, as follows:

Source Category	TSP	PM_{10}	$PM_{2.5}$
Residential	5.09 tpd	2.49 tpd	0.25 tpd
Commercial	4.99	2.44	0.24
Institutional	5.02	2.46	0.25
Industrial	2.34	1.14	0.11
Roads	6.00	2.94	0.29
Total:	23.44	11.47	1.14

CARB guidelines indicate typical dust from construction and other disturbed surfaces is approximately 49 percent PM_{10}, and only approximately five percent $PM_{2.5}$. Staff is not

proposing any draft amendments for Rule 6-1 to address fugitive dust, or any new rules for general control of fugitive dust at this time. Instead, staff proposes to focus on trackout that creates road dust, and the potential for subsequent vehicle traffic to pulverize the trackout into silt and $PM_{2.5}$.

As mentioned previously, the State Regional Water Quality Control Board requires Storm Water Pollution Prevention Plans for large construction projects, and provides a variety of Best Management Practices to control silt in water runoff, wind erosion, and trackout onto paved roads. SWPPP Best Management Practices summarized in Attachment 1-5A of this workshop report.

Attachment 1-5B of this workshop report provides a summary of wind erosion and fugitive dust control methodologies, divided into various categories of potential dust generating activities. These categories are:

1. Bulk Materials – Onsite Handling / Processing Operations
    - Conveying
    - Crushing
    - Screening
    - Stockpiles
2. Bulk Materials – Onsite Hauling / Transporting
    - Loading
    - Unloading
    - Stacking
    - Hauling
    - Transporting
3. Bulk Materials – Offsite Hauling / Transporting
    - Crossing or using paved roads accessible to the Public
4. Concrete and Demolition Work
    - Clearing concrete forms
    - Mechanical and manual demolition
5. Disturbed Surface Areas
6. Earth-moving Activities
    - Earth cutting and filling,
    - Drilling,
    - Grading,
    - Leveling,
    - Clearing and/or grubbing,
    - Excavating,
    - Trenching,
    - Landscaping,
    - Road shoulder maintenance
    - Soil mulching
    - Landfill operations,
    - Weed abatement by discing or blading.
7. Open Area and Vacant Land
8. Stabilization Requirements
9. Trackout, Carryout, & Spillage, Erosion Requirements
10. Traffic in Unpaved Work Sites

11. Unpaved Parking Areas, Staging Areas, Material Storage Areas, and Unpaved Access Roads and Haul Roads
12. Other Potential Dust Generating Operations / Control Measures

The SWPPP BMP's and these fugitive dust control methodologies are provided here as a reference for the future when a new rule(s) for control of fugitive dust is developed.

Entrained Road Dust

Road dust is divided into six categories based on the estimated emissions from each type of road: Paved Freeways; Paved Major Roads; Paved Collectors; Paved Local Streets; Unpaved Forest/Park Roads; and Unpaved Farm Roads. Each road type accumulates dust from four primary sources:

- Erosion in the form of dirt and debris that blows from the side of the road onto the road by gusts of wind, or that is washed onto the roadway during heavy rains, floods, or irrigation system malfunctions;
- Dirt or other bulk materials that may blow out of a truck, or may leak or spill from a truck as it travels down the road (known as carryout);
- Dirt or mud that adheres to a vehicle's tires or undercarriage which then dries and falls onto the roadway (known as trackout); and
- Particles from the road surface itself that can be eroded by vehicle traffic. These particles are very small when eroded from a paved or concrete road.

Two other sources of particulate can accumulate near roadways - particles from tire wear and brake pad wear. However, they are considered separate categories in the emissions inventory. Staff has no recommendations on how to address either tire wear or break pad wear.

Any dirt that accumulates on a roadway can be pulverized into fine particles by vehicle tires, and entrained into the air by the turbulence from passing vehicles. Any larger particles (larger than PM_{10}) fall back to the earth quickly (typically within a 100 - 200 feet), while the smaller particles ($PM_{2.5}$) either fall back to earth more slowly or become dissipated with the surrounding air. A study of near freeway particulate measurements indicates diesel and other ultra-fine PM from freeways tend to reach background concentrations about 250 meters away from the freeway.[2] [3]

Entrained Road Dust is identified as six different categories in the emission inventory, as follows:

Source Category	TSP	PM_{10}	$PM_{2.5}$
Paved Freeways	12.81 tpd	5.86 tpd	0.88 tpd
Paved Major Roads	15.49	7.08	1.06
Paved Collectors	3.13	1.43	0.21

[2] Improving Air Quality and Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective and Path Forward (2004 – 2014), April 2014, page 76.

[3] Zhu, Y.F., W.C. Hinds, S. Kim, S Shen, C. Sioutas, 2002. Study of ultrafine particles near a major highway with heavy-duty diesel traffic. Atmospheric Environment, 36, 4323-4335. doi:10.1016/S1352-2310(02)00354-0.

Paved Local Streets	21.50	9.83	1.47
Unpaved Forest/Park Roads	5.95	3.53	0.35
Unpaved Farm Roads	0.54	0.32	0.03
Total:	59.42	28.05	4.00

CARB estimates of particle size distribution vary with the type of roadway. Paved road dust is estimated to be 46 percent PM_{10}, and seven percent $PM_{2.5}$, with the remainder being particles larger than ten microns. Unpaved road dust is estimated to be 59 percent PM_{10}, and 6 percent $PM_{2.5}$, with the remainder being particles larger than 10 microns.

Entrained road dust from paved roads can be limited by requiring prevention of trackout, carryout, and erosion onto paved roads. Dust and silt are not usually found in the travel lanes, but rather accumulate along the sides of the roads (either in gutters or road shoulders) and on median strips. In some air districts, the various Public Works Departments have paved road shoulders and median strips, but that approach has the disadvantage of creating impermeable surfaces, which can aggravate concerns about water runoff into nearby storm drains and silt deposition into groundwater. A better solution is to provide low-silt gravel or vegetation along road shoulders and median strips to reduce the impact of air turbulence.

There are typically three ways to mitigate road dust:

- Support vegetation on median strips and next to road shoulders to minimize wind erosion
- Water flush
- Mechanical sweeping or Vacuum sweeping

The vegetation strategy is best when built into the design of highways and freeways. Water flushing is effective, but creates the concern of flushing silt into the groundwater. Street sweeping is often the most practical, and has the advantage of removing trash, litter and other debris from the roadway. However, mechanical sweepers often create as much dust as they prevent.

Entrained road dust from unpaved city, county, forest, park, and farm roads with very light traffic are much more difficult to address. Control of PM emissions from unpaved roads is simple, through paving, covering the road with low silt gravel, or covering with a petroleum road emulsion. However, since unpaved roads are so widely distributed around the Air District's nine counties, only on rare occasions is there enough traffic to create significant entrained road dust and only then is control of unpaved road dust likely to be cost effective.

Bulk Material Storage and Handling, Including Coke and Coal Operations

Bulk material storage and handling are significant sources of PM emissions, and have also been a source of public complaints. Bulk materials are unpackaged solids less than two inches in length or diameter, such as soil, sand, gravel, aggregate, construction materials, coke and coal. Wind erosion from storage and handling of these materials can contribute to fine particulate matter pollution when bulk material dust gets carried into the atmosphere by the wind or by being handled in the open air. Coke and coal are particularly troublesome because the dust is black. Coke or coal dust is far more visible than typical geologic dust, and black residue on people's cars, windows and patio furniture is especially annoying. Black coke and coal dust also absorb sunlight, so they have a greater impact on climate

change than most typical dust sources.

The Air District has approximately 120 facilities that store and handle bulk materials, 10 of which handle petroleum coke, and three facilities that store and handle coal. Approximately 40 of these facilities already have controls for fugitive dust, mostly water sprays. Wind breaks are a very effective method to control wind erosion that initiates fugitive dust plumes, particularly when bulk materials are actively conveyed from one place to another. Costs for wind screens and improvements to watering systems are relatively minor. Neighbor complaints are expected to be reduced significantly. A separate rulemaking for controlling fugitive dust from bulk material storage and handling sites is proposed.

Attachment 1-4: Applicable Federal Standards

The United States Environmental Protection Agency has adopted the following New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) that address PM emissions:

Federal New Source Performance Standards (40 C.F.R. Part 60)

Source Category	Subpart and Section	Description
All	Subpart A, § 60.11	General Provisions
Sulfuric Acid Production Units	Subpart Cd, § 60.31d	Emissions Guidelines and Compliance Times
Fossil-Fuel-Fired Steam Generators	Subpart D, § 60.42	Standards of Performance
Electric Utility Steam Generating Units	Subpart Da, § 60.42Da	Standards of Performance
Industrial-Commercial-Institutional Steam Generating Units	Subpart Db; §§ 60.43b & 60.48b	Standards of Performance
Small Industrial-Commercial-Institutional Steam Generating Units	Subpart Dc, § 60.43c	Standards of Performance
Incinerators	Subpart E, § 60.52	Standards of Performance
Large Municipal Waste Combustors	Subpart Eb, § 60.55b	Standards of Performance
Standards of Performance for Hospital/Medical/Infectious Waste Incinerators	Subpart Ec, § 60.52c	Standards of Performance
Sulfuric Acid Plants	Subpart H, § 60.83	Standards of Performance
Hot Mix Asphalt Facilities	Subpart I, § 60.92	Standards of Performance
Petroleum Refineries	Subpart J, § 60.102; Subpart Ja, § 60.102a & § 60.105a	Standards of Performance
Secondary Lead Smelters	Subpart L, § 60.122	Standards of Performance
Secondary Brass and Bronze Production Plants	Subpart M, § 60.132	Standards of Performance
Primary Emissions from Basic Oxygen Process Furnaces Constructed after June 11, 1973	Subpart N, § 60.142	Standards of Performance
Secondary Emissions from Basic Oxygen Process Steelmaking Facilities Constructed after January 20, 1983	Subpart Na, § 60.142a	Standards of Performance
Sewage Treatment Plants	Subpart O, § 60.152	Standards of Performance
Glass Manufacturing Plants	Subpart CC, § 60.292	Standards of Performance
Grain Elevators	Subpart DD, § 60.302	Standards of Performance
Lime Manufacturing	Subpart HH, § 60.342	Standards of Performance
Metallic Mineral Processing Plants	Subpart LL, § 60.382	Standards of Performance
Phosphate Rock Plants	Subpart NN, § 60.402	Standards of Performance
Ammonium Sulfate Manufacture	Subpart PP, § 60.442	Standards of Performance
Asphalt Processing and Asphalt Roofing Manufacture	Subpart UU, § 60.472	Standards of Performance
New Residential Wood Heaters	Subpart AAA, § 60.532	Standards of Performance
Nonmetallic Mineral Processing Plants	Subpart OOO, § 60.672	Standards of Performance
Wool Fiberglass Insulation Manufacturing Plants	Subpart PPP, § 60.682	Standards of Performance
Calciners and Dryers in Mineral Industries;	Subpart UUU, § 60.732	Standards of Performance
Municipal Solid Waste Landfills	Subpart WWW, § 60.752	Standards of Performance

Federal National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 C.F.R. Part 63)

Source Category	Subpart and Section	Description
Petroleum Refineries	Subpart CC, § 63.642	National Emission Standards for Hazardous Air Pollutants
Mineral Wool Production	Subpart DDD, § 63.1178	National Emission Standards for Hazardous Air Pollutants
Hazardous Waste Combustors; Incinerators, Cement Kilns & Lightweight Aggregate Kilns (Interim Standards)	Subpart EEE, § 63.1203, § 63.1205, § 63.1219, § 63.1221	National Emission Standards for Hazardous Air Pollutants
Wool Fiberglass Manufacturing	Subpart NNN, § 63.1382	National Emission Standards for Hazardous Air Pollutants
Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units, and Bypass Lines	Subpart UUU, § 63.1564, § 63.1565, § 63.1566, § 63.1567, § 63.1568, § 63.1569, § 63.1570	National Emission Standards for Hazardous Air Pollutants
Lime Manufacturing Plants	Subpart AAAAA, § 63.7090	National Emission Standards for Hazardous Air Pollutants
Industrial, Commercial, and Institutional Boilers and Process Heaters	Subpart DDDDD, § 63.7500	National Emission Standards for Hazardous Air Pollutants
Brick and Structural Clay Products Manufacturing	Subpart JJJJJ, § 63.8405	National Emission Standards for Hazardous Air Pollutants
Clay Ceramics Manufacturing Emission Limitations and Work Practice Standards	Subpart KKKKK, § 63.8555	National Emission Standards for Hazardous Air Pollutants
Asphalt Processing and Asphalt Roofing Manufacturing Emission Limitations	Subpart LLLLL, § 63.8684	National Emission Standards for Hazardous Air Pollutants
Refractory Products Manufacturing Emission Limitations and Work Practice Standards	Subpart SSSSS, § 63.9788	National Emission Standards for Hazardous Air Pollutants
Secondary Nonferrous Metals Processing Area Sources Standards, Compliance, and Monitoring Requirements	Subpart TTTTTT, § 63.114655	National Emission Standards for Hazardous Air Pollutants
Asphalt Processing and Asphalt Roofing Manufacturing Standards and Compliance Requirements	Subpart AAAAAAA, § 63.11561	National Emission Standards for Hazardous Air Pollutants
Chemical Preparations Industry Standards and Compliance Requirements	Subpart BBBBBBB, § 6311581	National Emission Standards for Hazardous Air Pollutants
Prepared Feeds Manufacturing Standards, Monitoring, and Compliance Requirements	Subpart DDDDDDD, § 63.11621	National Emission Standards for Hazardous Air Pollutants

ATTACHMENT 1-5: Examples of Control Measures / Best Management Practices for Dust Control

Fugitive Dust Control Measure: A technique, practice, equipment or procedure used to prevent, minimize or mitigate the generation, emissions, entrainment, suspension, and/or airborne transport of fugitive dust. For the purposes of this rule, Storm Water Pollution Prevention Plan (SWPPP) Best Management Practices (BMP), and other dust prevention techniques used to meet CEQA mitigation requirements or local ordinances are considered control measures. Control measures also include:

1 Application of water and dust suppressants;

2 Application of low-silt gravel, asphaltic emulsion, and vegetative or synthetic cover;

3 Physical restriction of fugitive dust, soil erosion and motive forces of fugitive dust (wind and water), including curbing, paving, wind breaks, chutes, shrouds, enclosures, buildings; and

4 Work practice standards including restricting vehicle speeds, controlling drops of bulk materials, using wash down pads, and keeping cargo beds in good repair and covered.

Attachment 1-5A

Applicable Storm Water Pollution Prevention Plan – Relevant Best Management Practices

Source Category	Best Management Practices
Erosion Control	EC-1 Scheduling EC-2 Preservation of Existing Vegetation EC-3 Hydraulic Mulch EC-4 Hydro seeding EC-5 Soil Binders EC-6 Straw Mulch EC-7 Geotextiles & Mats EC-8 Wood Mulching EC-15 Soil Preparation / Roughening EC-16 Non-Vegetative Stabilization
Sediment Control	SE-7 Street Sweeping and Vacuuming
Wind Erosion Control	WE-1 Wind Erosion Control
Tracking Control	TC-1 Stabilized Construction Entrance/Exit TC-2 Stabilized Construction Roadway TC-3 Entrance/Outlet Tire Wash
Non-Storm Water Management	NS-3 Paving and Grinding Operations NS-13 Concrete Finishing NS-16 Temporary Batch Plants
Waste Management & Materials	WM-1 Material Delivery and Storage WM-2 Material Use WM-3 Stockpile Management WM-4 Spill Prevention and Control WM-5 Solid Waste Management WM-8 Concrete Waste Management

Attachment 1-5B

Example Control Measures / Best Management Practices

Source Category	Control Measure	Guidance	Records
1.0 Bulk Materials – Onsite Handling / Processing Operations	**<u>During Active Operations</u>**		
• Conveying • Crushing • Screening • Stockpiles	1.1 Stabilize material before, during, and after conveying, crushing, or screening to prevent visible dust plumes.	1.1.1 Stabilize bulk material with water mist/fog or spray, or chemical/organic dust suppressant.	1.1.1 Establish records indicating stabilization methods and actions for each potential dust source.
	1.2 Use water misting/fogging systems or water sprays, to mitigate fine dust.		1.2.1 Monitor and log key operating parameters of abatement systems.
	1.3 Stabilize material on stockpiles with any indication of windblown visible dust emissions.	1.3.1 Maintain stockpiles to avoid steep sides or faces.	1.3.1 Monitor and record visible dust emissions observations.
	1.4 Use water spray trucks or water spray systems as necessary. Water truck / water spray system must cover entire stockpile.		1.4.1 Monitor and record visible dust emissions observations.
	1.5 Assess operational status of water misting/fog/spray abatement systems regularly and record status.		1.5.1 Monitor and log key operating parameters of abatement systems.
	1.6 Limit stockpiles within 100 yards of an occupied building to less than 8 feet in height.		1.6.1 Monitor and record visible dust emissions observations.
	1.7 Stabilize areas surrounding material stockpiles and conduct housekeeping to ensure materials remain consolidated in storage areas and away from vehicle travel paths.	1.7.1 Stabilize surrounding areas with water, silt free gravel, or dust suppressant.	1.7.1 Monitor and log housekeeping actions, and any cleanup necessary.
	1.8 Incorporate wind breaks, enclosures, or area covers as needed.	1.8.1 Wind barrier with no more than 50% porosity upwind of stockpiles and processing facilities. Height of the wind barrier equals the height of the pile. Distance of the barrier from the pile no more than twice the height of the pile.	
	1.9 Use transfer chutes and shrouds to mitigate dusting from the energy of solids handling and solids falling into and out of delivery trucks, and into processing equipment and onto conveyor belts.		1.9.1 Monitor and record visible dust emissions observations.

	1.10 Record stabilization methods, actions and results.	1.10.1 Document stabilization status in records.	1.10.1 Monitor and log key operating parameters of abatement systems.
	1.11 Clean up any spilled materials that could create dust plumes with wet vacuum or HEPA filter equipped vacuum system.		1.11.1 Record any cleanup necessary.
	1.12 If wind gusts exceed 25 mph, apply water to the stockpile a minimum of twice per hour, or install temporary coverings.		1.12.1 Document wind gusts, and contingency actions taken.
	1.13 Consider water wash of bulk materials to remove PM less than 10 microns.		
	During Periods of Inactive Operations		
	1.14 When not loading, unloading or stacking operations: cover, or stabilize stockpile and maintain soil crust.	1.14.1 Maintain soil crust.	1.14.1 Document stabilization actions for inactive sources.
	1.15 If stockpiles are inactive for more than 14 days, cover with tarp/plastic/other suitable material.	1.15.1 Cover with tarp, plastic or other suitable material and anchor adequately to prevent wind erosion.	
2.0 Bulk Materials – Onsite Hauling / Transporting	**During Active Operations**		
• Loading • Unloading • Stacking • Hauling • Transporting	2.1 Pre-water material prior to loading.	2.1.1 Stabilize bulk material with water or chemical/organic dust suppressant.	2.1.1 Record stabilization methods and actions for each potential dust source.
	2.2 Stabilize material while loading, unloading, and stacking to prevent visible dust plumes.		2.2.1 Monitor and log key operating parameters of abatement systems.
	2.3 Use water misting/fogging systems or water sprays to mitigate fine dust.		2.3.1 Monitor and record visible dust emissions observations.
	2.4 Use water spray trucks or water spray systems as necessary. Water truck / water spray system must cover entire stockpile.		2.4.1 Monitor and log key operating parameters of abatement systems.
	2.5 Assess operational status of water misting/fogging/spray abatement systems regularly, and record status.		2.5.1 Monitor and log key operating parameters of

			abatement systems.
	2.6 Add or remove material from the downwind portion of the stockpile.	2.6.1 Maintain stockpiles to avoid steep sides or faces	
	2.7 Conduct housekeeping to ensure bulk materials remain consolidated onto stockpiles, and remain away from vehicle travel paths.		2.7.1 Monitor and log housekeeping actions, and any cleanup necessary.
	2.8 Incorporate wind breaks, enclosures, or area covers as needed		
	2.9 Use transfer chutes and shrouds to mitigate dusting from the energy of solids handling and solids falling into and out of delivery trucks, and into processing equipment and onto conveyor belts.		
	2.10 Fully enclose or shroud conveyors.		
	2.11 Inspect cargo compartments for holes and other openings to prevent spillage.	2.11.1 Check belly-dump truck seals regularly. 2.11.2 Remove any trapped rocks to prevent spillage	2.11.1 Document leak check inspections, and any corrections or cleanup necessary.
	2.12 Empty loader bucket slowly and minimize drop height from loader bucket to prevent dust plumes		
	2.13 Ensure minimum of 6 inches freeboard in haul truck.		2.13.1 Monitor and record freeboard.
	2.14 Maintain highest point of bulk material below the edges of the cargo container;		2.13.1 Monitor and record material height.
	2.15 Ensure empty cargo compartments are clean, or covered with a tarp or other suitable closure;	2.15.2 Use tarps or other suitable enclosures on haul truck.	
	2.16 If trucks are also used for offsite hauling, ensure they comply with California DMV Vehicle Code Section 23114.		
	2.17 Limit vehicle traffic to established haul routes and parking lots by installing traffic barriers as necessary;		2.17.1 Document traffic control actions.
	2.18 Conduct vehicle traffic counts to determine daily vehicle traffic (DVT).	2.18.1 Traffic control reduces stabilization requirements.	2.18.1 Document actual DVT.
	2.19 When Daily Vehicle Traffic (DVT) exceeds 75, or AADVT exceeds 50, or DVT exceeds 25 from vehicles with 3 or more axles, stabilize unpaved roads or unpaved traffic areas.	2.19.1 Stabilize by watering, uniform layer of low silt gravel, chemical dust suppressant, vegetative materials, paving, road mix, or other method demonstrated to be effective and approved by the	

		APCO.	
	2.20 Limit vehicle speed to no more than 15 mph.		2.20.1 Document speed limit control actions.
	2.21 Record stabilization methods, actions and results.		2.21.1 Monitor and log key operating parameters of abatement systems.
	2.22 Clean up any spilled materials that could create dust plumes with wet vacuum or HEPA filter equipped vacuum system.		2.22.1 Record any cleanup necessary.
	2.23 If wind gusts exceed 25 mph, discontinue truck loading operations, and stop all vehicle traffic or cover all haul vehicles.		2.23.1 Document wind gusts, and contingency actions taken.
3.0 Bulk Materials – Offsite Hauling /	**<u>During Active Operations</u>**		
Transporting, crossing or using paved roads and paved areas accessible to the Public	3.1 Stabilize material or cover cargo compartment before hauling to prevent visible dust plumes.	3.1.1 Stabilize bulk material with water or chemical/organic dust suppressant. 3.1.2 Use tarps or other suitable enclosures on haul trucks.	3.1.1 Record stabilization methods and actions for each potential dust source.
	3.2 Record stabilization methods and actions.		
	3.3 Inspect cargo compartments for holes and other openings to prevent spillage.	3.3.1 Check belly-dump truck seals regularly. 3.3.2 Remove any trapped rocks to prevent spillage.	3.3.1 Document leak check inspections, and any cleanup necessary.
	3.4 Ensure minimum of 6 inches freeboard in haul truck.		3.4.1 Monitor and record freeboard.
	3.5 Maintain highest point of bulk material below the edges of the cargo container.		
	3.6 Ensure empty cargo compartments are clean, or covered with a tarp or other suitable closure.		3.6.1 Monitor and log compartment cleanliness, covers.
	3.7 Limit vehicle traffic to established haul routes and parking lots by installing traffic barriers as necessary.	3.7.1 Traffic control reduces stabilization requirements.	3.7.1 Document traffic control actions.
	3.8 Comply with California DMV Vehicle Code Section 23114.		
	3.9 Conduct vehicle traffic counts to determine daily vehicle traffic (DVT).		3.9.1 Document actual DVT.
	3.10 Where Daily Vehicle Traffic (DVT) exceeds 75, or AADVT exceeds 50, or DVT exceeds 25 from vehicles with 3	3.10.1 Stabilize by watering, uniform layer of low silt gravel,	

	or more axles, stabilize unpaved roads or unpaved traffic areas.	chemical dust suppressant, vegetative materials, paving, road mix, or other method demonstrated to be effective and approved by the APCO.	
	3.11 Limit vehicle speed to no more than 15 mph.		3.11.1 Document vehicle speed control actions.
	3.12 Record stabilization methods, actions and results.		3.12.1 Monitor and record visible dust emissions observations.
	3.13 Clean up any spilled materials that could create dust plumes with wet vacuum or HEPA filter equipped vacuum system.		3.13.1 Document leak check inspections, and any cleanup necessary.
	3.14 If wind gusts exceed 25 mph, stop all vehicle traffic or cover all haul vehicles.		3.14.1 Document wind gusts, and contingency actions taken.
	3.15 Prevent trackout onto paved public roads, per Section 9.0.		
4.0 Concrete & Demolition Work	**Clearing Concrete Forms**		
• Clearing concrete forms • Demolition – mechanical & manual	4.1 Use sweeping and water spray to clear forms.	4.1.1 Do not use high pressure air to clear forms.	4.1.1 Record cleanup methods and actions for concrete forms.
	4.2 Use vacuum system equipped with HEPA filtration to clear forms.		
	Demolition		
	4.3 Divide demolition activities into phases to minimize the amount of demolition debris exposed at any one time.		
	4.4 Stabilize building exterior surfaces and other wind erodible surfaces.		4.4.1 Monitor and record visible dust emissions observations.
	4.5 Apply sufficient water fog or mist during demolition to prevent visible dust plumes.	4.5.1 Stabilize demolished material with water or chemical/organic dust suppressant.	4.5.1 Record stabilization methods and actions for each potential dust source.
	4.6 Stabilize surface soil where support equipment and vehicles will operate.		4.6.1 Monitor and record visible dust emissions observations.
	4.7 Stabilize loose soil and demolition debris within 100 ft. of demolition work site.		4.7.1 Monitor and record visible dust emissions observations.

	4.8 If a wind gust occurs (wind speed exceeds 25 mph), discontinue demolition.		4.8.1 Document wind gusts, and contingency actions taken.
	4.9 Apply water mist or fog, or dust suppressant after demolition to establish a crust and prevent wind erosion.	4.9.1 Stabilize demolished material with water or chemical/organic dust suppressant.	4.9.1 Monitor and record soil crust observations.
5.0 Disturbed Surface Areas	**Preparation Activity**		
	5.1 Divide creation of disturbed surfaces areas into phases to minimize the disturbed surface areas exposed at any one time.		
	5.2 Maintain live perennial vegetation where possible.		
	5.3 Pre-water surface areas to depths of planned cuts or land shaping, allowing time for penetration.		
	During Active Operations		
	5.4 Stabilize disturbed surface areas as they are being created.	5.4.1 Stabilize disturbed surfaces with water or chemical/organic dust suppressant.	5.4.1 Record stabilization methods and actions for each potential dust source.
	5.5 Stabilize disturbed soil throughout the construction site and between structures to prevent visible dust plumes.	5.5.1 Apply suitable dust suppressant to create a soil crust.	5.5.1 Monitor and record soil crust observations.
	5.6 Limit vehicular traffic on disturbed soil to the extent possible.		
	5.7 Incorporate furrows, compacting, wind breaks, enclosures, or area covers as needed to reduce wind soil erosion.	5.7.1 Construct wind barriers with no more than 50% porosity to control windblown fugitive dust. The distance from wind barrier to the disturbed area should be no more than twice the height of the wind barrier. Each 1 foot of wind barrier height will typically protect 8 – 10 feet of disturbed surface. 5.7.2 When interior block walls are planned, install as early as possible.	5.7.1 Record prevention measures and actions for erosion control.
	5.8 Utilize work practices and/or structural provisions to prevent wind and water soil erosion onto paved areas accessible to the public.		5.8.1 Record prevention measures and actions for erosion control.
	5.9 Stabilize disturbed surface areas upon completion; on the last day of active operations prior to a weekend or holiday, or if inactive for more than 14 days.		5.9.1 Monitor and record soil crust observations.
	5.10 Record stabilization methods and actions as required.	5.10.1 Maintain soil moisture content at least 12% as measured by	5.10.1 Monitor and record visible dust emissions

		ASTM D2216-05. For areas where optimum moisture content for compaction is less than 12%, maintain at least 70% of optimum soil moisture content.	observations.
	5.11 If wind gusts exceed 25 mph, apply water a minimum of every 8 hours. If there is any evidence of wind driven fugitive dust, increase watering frequency to a minimum of every 6 hours.		5.11.1 Document wind gusts, and contingency actions taken.
	<u>During Periods of Inactivity</u>		
	5.13 When dust generating operation is inactive for 30 days or more: i. Pave, apply low silt gravel, or apply a suitable dust suppressant; or ii. Establish sufficient vegetative ground cover; and iii. Restrict vehicle access to the area through use of fences, ditches, vegetation, berms, or other suitable barriers; iv. Restore area as described in Section 15.15.		5.13.1 Monitor and record soil crust observations.
	5.14 If work site is a Large Operation, apply requirements in 5.13 after 21 days.		5.14.1 Document timeliness of soil stabilization.
	5.15 Re-establish ground cover as soon as reasonably possible, but no longer than 90 days, in sufficient quantity and density to expose less than 30% of unstabilized ground. Use aggregates, berms, or wind screens in combination with seeding and watering, chemical stabilizers and ground cover such that in total, these actions apply to all the disturbed surface areas.		5.15.1 Document completion of soil stabilization.
6.0 Earth-moving activities	**<u>Preparation Activity</u>**		
Use of any equipment for any activity where soil is being disturbed, moved or uncovered that may generate fugitive dust emissions, and shall include but not limited to the following:	6.1 Phase work schedule to reduce the amount of disturbed surface area at any one time; and to allow for more effective interim watering and stabilization to minimize potential dust generation.	6.1.1 Grade each project phase separately, timed to coincide with construction. 6.1.2 Apply interim watering and stabilization to minimize potential for dust generation.	
• Earth cutting and filling, • Drilling, • Grading,	6.2 Pre-apply water and allow time for penetration to stabilize soil prior to earth-moving activities.	6.2.1 Apply mist/fog, water sprays, or chemical/dust suppressant to stabilize soil and backfill material.	6.2.1 Document stabilization methods and actions for each potential dust source.

• Leveling, • Clearing and/or grubbing, • Excavating, • Trenching, • Landscaping, • Road shoulder maintenance • Soil mulching • Landfill operations, • Weed abatement by discing or blading.			
	6.3 Maintain live perennial vegetation where possible.		
	During Active Operations		
	6.4 Dedicate water truck or high capacity water fog to work site.	6.4.1 Or dedicate water mist/fog equipment to work site and backfilling equipment.	
	6.5 Pre-water and maintain surface soils in stable condition where vehicles and support equipment operate.	6.5.1 Apply water or chemical dust suppressant to unpaved vehicle equipment traffic areas sufficient to limit visible dust emissions.	6.5.1 Monitor and record visible dust emissions observations.
	6.6 Pre-apply water to depth of proposed cuts; and allow time for penetration to stabilize soil prior to cutting, or trenching. For deep trenching, trench in 18 inches increments, then re-apply water.		6.6.1 Record prevention measures and actions.
	6.7 Apply water or chemical/organic dust suppressant in sufficient quantities to prevent visible dust.	6.7.1 Stabilize soil with water or chemical/organic dust suppressant.	6.7.1 Monitor and record soil crust observations.
	6.8 Re-apply water as necessary to maintain soils in a damp condition.		
	6.9 Stabilize cut and fill material during trenching and handling.		
	6.10 Stabilize cut and fill material when not actively handling.		
	6.11 Empty loader bucket slowly and minimize drop height from loader bucket to prevent dust plumes.		
	6.12 Stabilize soil during and immediately after clearing and grubbing activities;		6.12.1 Monitor and record soil crust observations.
	6.13 Record stabilization methods and actions as required.		
	6.14 Construct furrows, use compaction, or erect 3-5 foot high wind barriers or three-side barriers with no more than 50% porosity upwind of earthmoving activities to limit the impact	6.14.1 Construct wind barriers with no more than 50% porosity to control windblown fugitive dust.	

	of the wind.	The distance from wind barrier to the disturbed area should be no more than twice the height of the wind barrier. Each 1 foot of wind barrier height will typically protect 8 – 10 feet of disturbed surface. In instances where backfill material is piled, the wind barrier height should be equal to or greater than the height of the pile, and the distance from wind barrier to the pile should be no more than twice the height of the pile.	
	6.15 Wash mud and soil from equipment at completion of each task.		
	6.16 Restrict vehicles access and traffic during periods of inactivity to the extent possible.		6.16.1 Monitor and document traffic controls.
	6.17 Stabilize soils once earth-moving activities are complete.		
	6.18 Utilize work practices and/or structural provisions to prevent wind and water soil erosion onto paved areas accessible to the public.		6.18.1 Document actions taken to prevent trackout and erosion.
	6.19 Stabilize sloping surfaces using seeding and soil binders until vegetation or ground cover can effectively stabilize the slopes.		
	6.20 If wind gusts exceed 25 mph, discontinue/cease cut and fill operations, trenching, clearing and grubbing, road shoulder maintenance, and weed abatement operations.		6.20.1 Document wind gusts, and contingency actions taken.
	During Periods of Inactive Operations		
	6.22 Restrict access to vehicle traffic during periods of inactivity to the extent possible.		
	6.23 If area remains inactive for 14 days or more, apply water or chemical dust suppressant to create a stabilized surface.		6.23.1 Monitor and record soil crust observations.
	6.24 Apply chemical dust suppressants and/or low silt gravel to maintain a stabilized surface after completing road shoulder maintenance.	6.24.1 Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs. 6.24.2 Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder weed abatement and	6.24.1 Document timeliness of soil stabilization.

		maintenance costs.	
7.0 Open Area and Vacant land	7.1 Apply water or chemical/organic dust suppressant in sufficient quantities to prevent visible dust plumes.	7.1.1 Stabilize open areas with water or chemical/organic dust suppressant.	7.1.1 Document stabilization methods and actions for each potential dust source.
	7.2 Stabilize sloping surfaces using seeding and soil binders until vegetation or ground cover can effectively stabilize the open area.		7.2.1 Document stabilization methods and actions for sloping surfaces and open areas.
	7.3 Install barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures to prevent motor vehicle traffic and off-road vehicle traffic on vacant land.		
8.0 Stabilization Requirements	**Unpaved roads, parking lots and material storage area:**		
	8.1 Stabilize for a centerline distance of at least 100 feet and a width of at least 20 feet to the point of intersection with any paved area accessible to the public.	8.1.1 Stabilizers must stand up to vehicle traffic.	8.1.1 Document stabilization methods and actions for each potential dust source.
	8.2 Cover with at least 3 inches base of gravel with less than 5% silt content. Ensure that unpaved road base silt loading remains less than 8% silt content, or less than 0.33 oz./ft^2.		8.2.1 Silt content is measured by ASTM Method C136-06. Silt is characterized as material less than 75 microns and can pass through a No. 200 sieve.
	8.3 Stabilize with petroleum emulsion.		
	8.4 Pave.		
	8.5 Keep adequately wetted.		
	8.6 Prevent trackout onto paved roads accessible to the public, per Section 9.0		
	Disturbed Surface Area		
	8.7 Stabilize with one of the following: i. Water; ii. Chemical stabilizers; iii. A synthetic cover; iv. Planted vegetative cover; v. Other equivalent methods or techniques.	8.7.1 Stabilize until permanent structure, or vegetation is in place.	8.7.1 Monitor and record soil stability observations.
	8.8 The owner/operator of any disturbed surface area on which no dust generating operation is occurring (a work site that is under construction, or temporarily or permanently inactive) shall be considered stabilized by meeting at least one of the	8.8.1 Sample and test stabilization as needed to ensure no visible dust emissions.	8.8.1 Document soil stability observations.

	following requirements: i. Maintain a visible soil crust. Crust is measured by test method cited in Attachment 6; ii. Maintain a wind erosion threshold friction velocity (TFV) for the area (corrected for non-erodible elements) of 100 cm/second or higher, as cited in Attachment 6; iii. Maintain at least 50% of the surface area in flat vegetative cover (i.e. rooted vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation and not subject to movement by wind); iv. Maintain at least 30% of the surface area in standing vegetative cover (i.e. rooted vegetation with a predominant vertical orientation); v. Maintain at least 10% of the surface area in standing vegetative cover (i.e. rooted vegetation with a predominant vertical orientation), and where the threshold friction velocity (TFV) for the area (corrected for non-erodible elements) is 43 cm/second or higher; vi. Maintain at least 10% of the surface area in non-erodible elements such as rocks, stones, or hard-packed clumps of soil; or vii. Comply with an alternate test method, upon written approval from the APCO.		
	8.9 Should a disturbed surface area contain more than one type of visibly distinguishable stabilization, the owner/operator shall test each representative surface separately for stability using the appropriate test methods described in Section 8.7, and aggregate the results to determine compliance with the stability requirements.		8.9.1 Document soil stability observations and aggregate results.

9.0 Trackout, Carryout & Spillage, Erosion Requirements	9.1 Any owner/operator or agency with jurisdiction over unpaved areas with access to public paved roads shall prevent trackout, carryout, spillage and erosion onto these paved public roads.		9.1.1 Document monitoring of prevention processes, results, and corrective actions taken.
	9.2 Each owner/operator or agency shall monitor public paved roads adjacent to their unpaved areas to ensure no visible roadway dust accumulates on such public paved roads.	9.2.1 Monitor at least twice each workday to ensure prevention of dirt on public roadways.	9.2.1 Document monitoring of adjacent paved roads, results, and corrective

			actions taken.
	9.3 Each owner/operator or agency whose unpaved area is the source of visible roadway dust on public paved roads shall clean the public paved road.		9.3.1 Document any cleanup actions taken, and timeline for completion.
	Trackout Control		
	9.4 All vehicles and equipment owned or operated by a facility shall pass through trackout control device prior to exiting the facility onto public paved roads;	9.4.1 Route traffic to ensure all vehicles pass through trackout control.	
	9.5 Install, maintain and use a trackout control device that prevents and controls trackout by removing particulate matter from tires and the exterior surfaces of haul trucks and motor vehicles that exit the work site onto public paved roads.		
	9.6 Owner/operator shall prevent trackout by implementing at least one of the following: i. Pave at least 100 feet and a width of at least 20 feet to the point of intersection with the paved area accessible to the public. ii. Install a 100 feet long X 20 feet wide gravel pad comprised of at least 3 inches base of gravel with less than 5% silt content. Ensure that unpaved road base silt loading remains less than 8% silt content, or less than 0.33 oz./ft^2. iii. Install a grizzly/rumble grate that consists of raised dividers (rails, pipes, or grates) a minimum of three inches tall, six inches apart, and 20 feet long to create vibration that shakes particulate matter off the entire circumference of each wheel as the vehicle passes over the grizzly or rumble grate. iv. Install a wheel wash system at each exit onto paved areas accessible to the public.	9.6.1 Monitor paved public road to ensure no trackout or visible roadway dust. 9.6.2 Monitor critical parameters of trackout control to ensure proper operation.	9.6.1 Document monitoring and results of trackout control.
	Prevention of Carryout and Spillage		
	9.7 When loading haul vehicles, maintain at least 6 inches of freeboard.	9.7.1 Monitor loading periodically for freeboard.	9.7.1 Document checks for prevention of carryout and spillage.
	9.8 Maintain highest point of bulk material below the edges of the cargo container.	9.8.1 Monitor loading periodically for overfill.	
	9.9 Inspect cargo compartment for leaks or compromised seals to prevent spillage.	9.9.1 Monitor for potential leaks.	
	9.10 Ensure empty cargo compartments are clean, or covered with a tarp or other suitable closure.	9.10.1 Monitor for cleanliness, and adequate cover.	

	9.11 Comply with California DMV Vehicle Code Section 23114.		
	Prevention of Erosion		
	9.12 Monitor perimeter of facility, particularly near any paved areas accessible to the public to ensure no wind or water erosion deposits mud, dirt or visible road dust onto paved roads.	9.12.1 Monitor for erosion, and any visible road dust.	9.12.1 Document prevention of erosion and road dust.
	9.13 Utilize work practices and/or structural provisions to prevent wind and water soil erosion onto paved areas accessible to the public.		
	Cleanup of Trackout		
	9.14 Removal of any visible trackout, carryout or any visible roadway dust from any source on a paved public road shall be accomplished using wet sweeping (rotary brush or wet broom) with sufficient water, including but not limited to kick broom, steel bristle broom, Teflon broom, or a HEPA filter equipped vacuum device at the speed recommended by the manufacturer.	9.14.1 Cleanup any mud or visible roadway dust as required.	9.14.1 Document discovery of mud, dirt, or visible roadway dust, and timeliness of cleanup.
	9.15 Operate a PM_{10}-efficient street sweeper that has pickup efficiency of at least 80%, and equipped with rotary brush or wet broom with sufficient water, including but not limited to kick broom, steel bristle broom, Teflon broom, vacuum, at the speed recommended by the manufacturer.		
	9.16 Flush with water if curbs or gutters are not present and where the use of water will not result in residue remaining as further source of trackout, or result in adverse impact on storm water drainage systems.		
	9.17 Manually sweep up or vacuum up deposits with a vacuum equipped with a HEPA filter.		
	9.18 Use of blower devices or dry rotary brushes or brooms for removal from paved public roads is expressly prohibited. The removal of trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required.		
	Cleanup Timeliness		
	9.19 Each owner/operator or agency whose operations or unpaved area is the source of visible roadway dust on public paved roads shall clean up trackout, spillage, and/or erosion from paved areas accessible to the public as required.		
10.0 Traffic in construction sites and on unpaved roads	10.1 Limit vehicle speed to less than 15 mph.		

and other unpaved surfaces			
	10.2 Post speed limit signs that meet State Department of Transportation standards at each unpaved road entrance and post at least every ¼ mile, with signs readable in both directions of travel.		
	10.3 Require construction traffic to use established haul routes. Use barriers to ensure vehicles use only established parking areas and haul routes.		
	10.4 Establish vehicle speed enforcement process that includes the following: • Customers or visitors found to be travelling in excess of the posted speed limit: 1) issue verbal warning; then 2) facility access to be limited; then 3) facility access to be denied. • Employees found to be travelling in excess of the posted speed limit: 1) issue verbal warning; then 2) progressive discipline up to and including termination. • Contractors and subcontractors found to be travelling in excess of the posted speed limit: 1) issue verbal warning; then 2) site removal and future facility access denied.	10.4.1 Monitor vehicle traffic speeds periodically.	10.4.1 Maintain records demonstrating compliance with the vehicle speed enforcement process.
11.0 Unpaved parking areas, staging areas, and material storage areas; and unpaved access road and haul roads.	11.1 Limit number and size of unpaved areas.		
	11.2 Limit number and size of entrances and exits to unpaved areas.		
	11.3 Stabilize unpaved roads, parking, staging, and material storage areas during use to prevent visible dust plumes.	11.3.1 With water, chemical dust suppressant, vegetative materials, paving, road mix, or low silt gravel, or other method demonstrated to be effective and approved by the APCO.	11.3.1 Document stabilization of unpaved roads, and other unpaved areas. 11.3.2 Monitor and document visible dust plumes from unpaved roads and unpaved areas.
	11.4 Consider paving.		

	11.5 Apply material with low silt content (i.e. asphalt, concrete, recycled road base, or gravel to a minimum depth of 3 inches.		
	11.6 Limit vehicle access to unpaved access roads and haul routes, parking areas, staging areas, and material storage areas with barriers.	11.6.1 Reduces stabilization requirements.	
	11.7 Limit vehicles trips to less than 20 per day.	11.7.1 Document daily vehicle trips past busiest locations, at least twice annually.	11.7.1 Document annual vehicle daily trip monitoring, and results.
	11.8 Limit vehicles speeds to less than 15 mph.		11.9 Document how vehicle speed limits are managed.
	11.10 If wind gusts exceed 25 mph, stop all vehicle traffic or apply water every 15 minutes during active operations.		11.10.1 Document actions taken during wind gusts.
	11.11 In areas not used for more than 14 days, stabilize exposed soil to prevent visible dust plumes.		
	11.12 Stabilize parking, staging, and material storage areas at project completion.	11.12.1 Soil stabilization, uniform layer of low silt gravel, or paving.	11.12.1 Document stabilization and test results.
12.0 Other Control Measures	12.1 Any other control measure approved by the APCO and U.S. EPA as equivalent to the methods described in this table.		

Attachment 1-6: Test Methods for Determining Soil Stabilization

Determination of Adequately Wetted: Field determination of "adequately wetted" shall be as follows:

- Sample at least one quart of solids from the top three inches of a road, bare area or surface of a stockpile.
- The sample shall be poured out from a height of four (4) feet onto a clean hard surface. The material shall be considered to be adequately wetted if there is no observable dust emitted when the material hits the hard surface.

Determination of Soil Moisture Content: Soil moisture content requirements shall be determined as follows:

- Apply water to maintain soil moisture content at a minimum of 12% as determined by ASTM Method D2216-05 or other equivalent method approved by the APCO.
- For areas that have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-02e1 or other equivalent method approved by the APCO, maintain at least 70% of the optimum soil moisture content.

Determination of Surface Crusting: Measurement of the stability of surface crusting on horizontal surfaces shall be conducted in accordance with the following test method (reference - San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 2):

- Where a visible crust exists, drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16 to 17 grams from a distance of 30 centimeters (one foot) directly above (at a 90-degree angle perpendicular to) the ground surface. If blow sand (thin deposits of loose grains covering less than 50 percent of the surface that have not originated from the surface being tested) is present, clear the blow sand from the surfaces to be tested before dropping the steel ball.
- A sufficient crust is determined to exist if, when the ball is dropped according to Section 6-5-613.1, the ball does not sink into the surface so that it is partially or fully surrounded by loose grains and, upon removing the ball, the surface on which it was dropped has not been pulverized so that loose grains are visible.
- Drop the ball three times each in three representative test areas within a survey area measuring 1 foot by 1 foot that represents a random portion of the surface being evaluated. The test area shall be deemed to have passed if at least two of the three times the ball was dropped; the results met the criteria in Section 6-5-613.2. If all three test areas pass, the area shall be deemed to be "sufficiently crusted".

Determination of Threshold Friction Velocity (TFV): For disturbed surface areas that are not crusted or partially covered with vegetation, determine threshold friction velocity (TFV) in accordance with the following test method (reference - San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 4):

- Obtain and stack a set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm, and 0.25 mm or obtain and stack a set of standard/commonly available sieves. Place the sieves in order according to size openings, beginning with the largest size opening at the top. Place a collector pan underneath the bottom (0.25 mm) sieve. Collect a sample of loose surface material from an area at least 30 cm by 30 cm in size to a depth of approximately 1 cm using a brush and dustpan or other similar device. Only collect soil samples from dry surfaces (i.e. when the surface is not damp to the touch). Remove any rocks larger than 1 cm in diameter from the sample. Pour the sample into the top sieve (4 mm opening) and cover the sieve/collector pan unit with a lid. Minimize escape of particles into the air when transferring surface soil into the sieve/collector pan unit. Move the covered sieve/collector pan unit by hand using a broad, circular arm motion in the horizontal plane. Complete twenty circular arm

movements, ten clockwise and ten counterclockwise, at a speed just necessary to achieve some relative horizontal motion between the sieves and the particles. Remove the lid from the sieve/collector pan unit and disassemble each sieve separately beginning with the largest sieve. As each sieve is removed, examine it for loose particles. If loose particles have not been sifted to the finest sieve through which they can pass, reassemble and cover the sieve/collector pan unit and gently rotate it an additional ten times. After disassembling the sieve/collector pan unit, slightly tilt and gently tap each sieve and the collector pan so that material aligns along one side. In doing so, minimize escape of particles into the air. Line up the sieves and collector pan in a row and visibly inspect the relative quantities of catch in order to determine which sieve (or whether the collector pan) contains the greatest volume of material. If a visual determination of relative volumes of catch among sieves is difficult, use a graduated cylinder to measure the volume.

- Estimate TFV for the sieve catch with the greatest volume using Table 1 of this attachment, which provides a correlation between sieve opening size and TFV.

Table 1. Determination of Threshold Friction Velocity

Tyler Sieve No.	ASTM 11 Sieve No.	Opening (mm)	TFV (cm/s)
5	5	4	135
9	10	2	100
16	18	1	76
32	35	0.5	58
60	60	0.25	43
Collector Pan	---	--	30

- Collect at least three soil samples which represent random portions of the overall conditions of the site, repeat the above TFV test method for each sample and average the resulting TFVs together to determine the TFV uncorrected for non-erodible elements. Non-erodible elements are distinct elements, in the random portion of the overall conditions of the site, that are larger than 1 cm in diameter, remain firmly in place during a wind gust, and inhibit soil loss by protecting disturbed surface from the shear stress of the wind. Non-erodible elements include stones and bulk surface material but do not include flat or standing vegetation. For surfaces with non-erodible elements, determine corrections to the TFV by identifying the fraction of the survey area, as viewed from directly overhead, that is occupied by non-erodible elements using the following procedure. For a more detailed description of this procedure, see Section 6 (Test Methods for Stabilization-Rock Test Method) of this attachment. Select a survey area of 1 meter by 1 meter that represents a random portion of the overall conditions of the site. Where many non-erodible elements lie within the survey area, separate the non-erodible elements into groups according to size. For each group, calculate the overhead area for the non-erodible elements according to the following equations:

Average Dimensions = (Average Length) x (Average Width) Eq. 1

Overhead Area = (Average Dimensions) x (Number of Elements) Eq. 2

Total Overhead Area = Eq. 3
Overhead Area of Group 1 + Overhead Area of Group 2 (etc.)

Total Frontal Area = Eq. 4
Total Overhead Area/2

Percent Cover of Non-Erodible Elements = Eq. 5
(Total Frontal Area/Survey Area) x 100

Note: Ensure consistent units of measurement (e.g., square meters or square inches when calculating percent cover).

Repeat this procedure on an additional two distinct survey areas that represent a random portion of the overall conditions of the site and average the results. Use Table 2 of this attachment to identify the correction factor for the percent cover of non-erodible elements. Multiply the TFV by the corresponding correction factor to calculate the TFV corrected for non-erodible elements.

Table 2. Correction Factors for Threshold Friction Velocity

Percent Cover of Non-Erodible Elements	Correction Factor
Greater than or equal to 10%	+ 5
Greater than or equal to 5% and less than 10%	+ 3
Less than 5% and greater than or equal to 1%	+ 2
Less than 1%	None

Determination of Flat Vegetative Cover: For disturbed surface areas with partial vegetative cover, determine the proportion of flat vegetative cover according to the test method in San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 5.

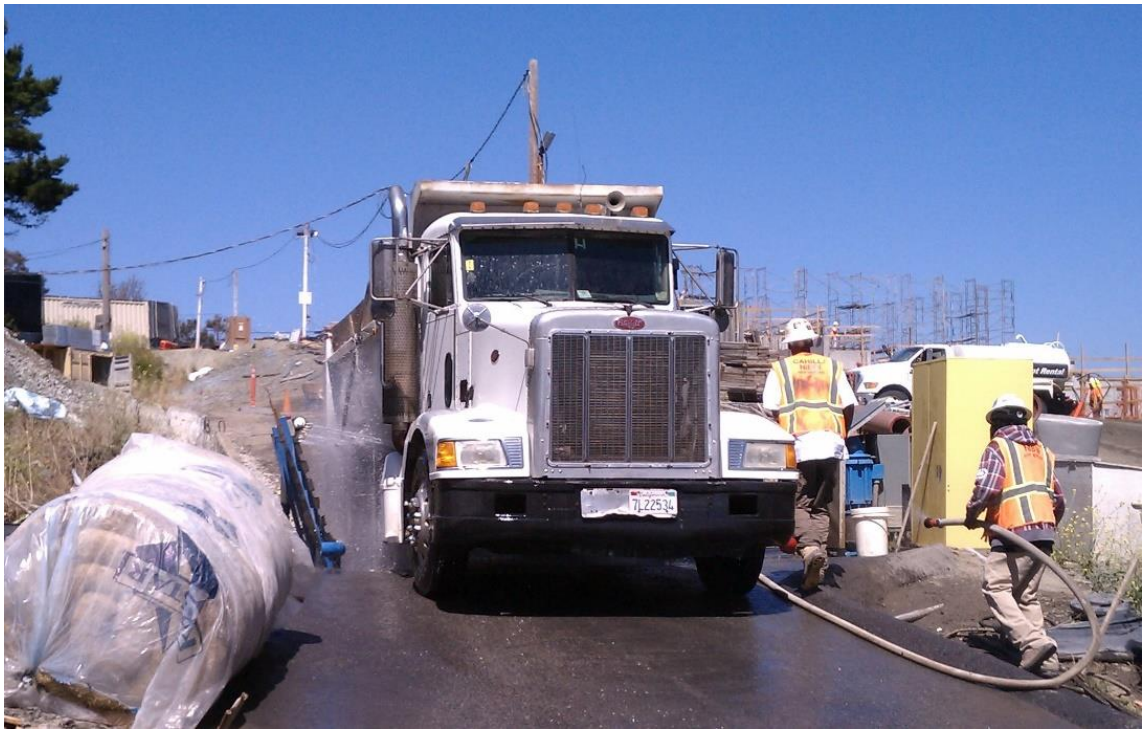
Determination of Standing Vegetative Cover: For disturbed surface areas with partial vegetative cover, determine the proportion of standing vegetative cover according to the test method in San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 6.

Determination of Non-Erodible Elements Cover: For disturbed surface areas with partial rock and other non-erodible elements cover, determine the proportion of non-erodibles according to the Rock Test method in San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 7.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

STAFF REPORT – PARTICULATE MATTER

New Regulation 6, Rule 6: Prohibition of Trackout



Guy A. Gimlen
Principal Air Quality Engineer
June 2018

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District staff members who contributed significantly to the development of this report and proposal:

Alexander Crockett, Esq., Assistant Counsel, Legal
Wayne Kino, Deputy Air Pollution Control Officer
Don VanBuren, Senior Air Quality Engineer, Compliance & Enforcement
Ed Giacometti, Air Program Supervisor, Compliance & Enforcement
Jeff Gove, Director, Compliance and Enforcement
Paul Hibser, Air Program Supervisor, Compliance & Enforcement
Ron Carey, Senior Inspector, Compliance & Enforcement
Greg Solomon, Supervisor, Engineering
Brian Lusher, Senior Air Quality Engineer, Engineering
Jerry Bovee, Manager, Meteorology and Measurement
Chuck McClure, Air Program Supervisor, Meteorology and Measurement
Tim Underwood, Principal Air Quality Engineer, Meteorology and Measurement
Brad Kino, Senior Air Quality Engineer, Meteorology and Measurement
Luz Gomez, Manager, Community Engagement
David Ralston, Manager, Community Engagement
Azibuike Abaka, Public Information Officer II, Community Engagement
Kristen Law, Staff Specialist I, Community Engagement
Rosene Salmo, Staff Specialist I, Community Engagement
Aneesh Rana, Public Information Officer II, Community Engagement

STAFF REPORT

Regulation 6, Rule 6: Prohibition of Trackout

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

The Bay Area Air Quality Management District (Air District) is proposing a new regulation to control particulate matter, Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout (Rule 6-6). This workshop report provides background information and rationale for new Rule 6-6. This staff report is intended to provide members of the public with a description of the new regulation in advance of a Public Hearing the Air District to be held in Spring 2018.

The Air District is proposing new Rule 6-6 as part of a suite of proposals aimed at addressing particulate matter emissions. Small particles cause or contribute to a wide variety of serious health problems, including asthma, bronchitis, cardio-vascular diseases, and cancer. The Air District has committed to reducing particulate matter levels to achieve significant health benefits. The new rule will help reduce emissions of particulate matter in the Bay Area in a feasible and cost-effective manner, thereby improving public health and air quality throughout the region. The suite of proposals includes (i) amendments to Rule 6-1 to strengthen that rule's particulate matter emissions limits applicable to general industrial operations; (ii) this new Rule 6-6 addressing trackout, and (iii) a new Regulation 6 providing common definitions and test methods that will apply generally to all the Rules in Regulation 6. More information about these related proposals can be found in the staff reports for each of the proposals, which are being published concurrently with this report.

Proposed new Rule 6-6 focuses on road dust, a large source of fine particulates. Road dust is composed of small particles from erosion of the road's surface and fine particles from vehicles driving over and pulverizing any solid materials that may have been deposited on the road. Tire wear and brake pad wear are also sources of particulates found near roadways. Proposed new Rule 6-6 addresses mud and dirt that can be "tracked out" onto a paved road from a construction site, quarry, landfill or other disturbed surface. This material – referred to as "trackout" – contributes to particulate pollution because vehicle traffic on the paved road will pulverize the mud and dirt into smaller particles (known as silt), and turbulence from the vehicles entrain the silt into the air. Proposed new Rule 6-6 addresses this problem by prohibiting trackout of mud and dirt onto paved roadways, and will focus Air District Compliance and Enforcement resources on the large sites with the greatest potential for significant trackout. Cities and counties can continue to monitor and enforce prohibition of trackout at smaller sites.

Staff estimates proposed new Rule 6-6 will affect about 150 – 250 large bulk material, large construction and large disturbed surface sites. Staff estimates there are currently an additional 1,000 smaller sites. The large bulk material sites consist of approximately 10 quarries, 10 asphalt plants, and 25 other miscellaneous bulk solids including coke and coal handling facilities), large construction sites (150 – 200 construction sites at any given time), and large disturbed surface sites (approximately 15 landfills and 10 other unpaved equipment and material storage sites) in the Bay Area. Each of these facilities is currently required to meet project CEQA requirements, and/or a Regional Water Quality Control Board requirement to control trackout onto paved roads, but enforcement appears to be spotty. Staff found many locations where significant mud and dirt had been tracked out from the exits of these sites. Staff believes enhanced enforcement by the Air District staff will improve emissions performance.

Expected emission reductions from proposed new Rule 6-6 are 2.69 ton per day (tpd) of total suspended particulates (TSP), 1.23 tpd of PM_{10}, and 0.18 tpd of $PM_{2.5}$. Costs are expected to be minimal since most sites currently control trackout to some degree. Staff observes that additional capital equipment may be needed at a few sites, but most improvement will come through management attention to monitoring and controlling trackout.

This staff report describes proposed new Rule 6-6. Following this Executive Summary, Section II, Background refers to the parallel sections in the Regulation 6 staff report. Section III, Proposed Requirements describes the specific requirements and emission limits, and rationale supporting each. Section IV, Emissions and Emission Reductions describe the expected emissions impacts. Section V provides estimated costs for implementation of Rule 6-6, assesses cost effectiveness of the emission reductions, the Socioeconomic Impacts on the affected industries, and implementation impacts for the Air District. Section VI provides a discussion how this regulation fits into the existing structure of state and federal regulatory requirements. Section VII summarizes the environmental impacts, and references the California Environmental Quality Act analysis conducted for the Rule 6-6, in combination with new Regulation 6, and amendments to Regulation 6, Rule 1: General Requirements. A Negative Declaration is proposed as a result of the CEQA review. Section VIII describes the rule development and public participation process used to ensure all affected and interested parties participate in this project. Section IX summarizes the findings needed to adopt a new regulation, and recommends Board approval of Rule 6-6, and the Negative Declaration from the CEQA analysis. References and Appendices are included at the end of the staff report.

Staff recommends the Board of Directors adopt new Regulation 6, Rule 6: Prohibition of Trackout, and approve the associated CEQA Analysis Negative Declarations at the Public Hearing scheduled for Spring 2018.

The Air District invites all interested members of the public to review proposed new Regulation 6, Rule 6 and this Staff Report, provide comments on this proposal, and participate in the Public Hearing. Air District staff will accept written comments, will respond to all comments received and will present the final proposals to the Air District's Board of Directors for their consideration. For further information in advance of the Public Hearing, please contact Guy Gimlen, Principal Air Quality Engineer, (415) 749-4734, ggimlen@baaqmd.gov.

II. BACKGROUND

Refer to the Background section of the workshop report for new draft Regulation 6, Section A for the broad review of all particulate matter sources here in the Bay Area.

A. Industry / Source Description

There is potential for trackout at any location where the ground has been disturbed, and vehicle (primarily truck) traffic can collect dirt or solids from the disturbed surfaces, unpaved roads or construction areas. Staff finds that bulk material storage and handling facilities, construction sites, and any area with open disturbed surface is vulnerable to creating trackout.

1. Industry / Facility Operations

Staff recommends a new rule to prohibit trackout of mud and dirt onto adjacent public roadways, where subsequent traffic can pulverize the dirt into silt, and turbulence from the vehicle entrains the silt into the air. This material is one source of road dust, and can readily be controlled.

Trackout is a concern at bulk material storage sites, construction sites, and areas where the normal surface of the ground has been disturbed, including landfills. Water is often used to control dust. Mud can form at these locations, and accumulate on the bottoms of vehicles and vehicle tires. When vehicles leave the work site, they can track mud out onto a public roadway. Over the next approximately 50 feet of the road, the mud falls off the vehicles and tires. As the mud dries, the dirt remains on the paved road where subsequent traffic can pulverize the dirt into silt, and the turbulence from the passing vehicles entrains the silt into the air. This mud/residual dirt or any other kinds of solid material is called trackout. Trackout can be a significant source of particulate matter with an aerodynamic diameter of 2.5 microns ($PM_{2.5}$), and can be controlled cost effectively by knocking or washing the mud off the vehicles before they leave the site.

2. Pollutants and Emissions Sources

The pollutants of concern are any dirt, mud or other industrial solid material that can collect on vehicle tires and under-carriage, then subsequently fall off the vehicle onto a paved public roadway. These solids can then be pulverized by traffic, creating silt that is easily entrained into the air by the passing vehicles. The amount of particulate matter with an aerodynamic diameter of ten microns (PM_{10}) and $PM_{2.5}$ in trackout can vary widely depending on the solid, and depending on how long the solid has been out on the road. Ultimately all the solids are pulverized and entrained into the air, falling onto nearby areas or staying suspended in the air for a substantial period. Studies of California freeways have shown that particles larger than 2.5 microns tend to fall back to earth within 1,000 feet of the road, while the particles smaller than 2.5 microns ($PM_{2.5}$), stay suspended in the air and become part of the background level of PM.

Emission sources include any site that has vehicle traffic over unpaved roads and disturbed surfaces. Rock quarries, asphalt plants, construction sites, unpaved equipment storage yards, landfills, and any industrial facility that handles solids has the potential to create trackout.

3. Current Emissions Control Technology and Methods

Current emission controls for trackout include systems called grizzlies or rumble strips to shake the dirt and mud from the vehicles, and spread the tire treads so that the dirt and mud can fall from the tires. In general, grizzlies work well. Staff observed the largest concern is keeping the receiving area below the grizzly cleaned out, so that the dirt and mud can fall free from the tires.

Staff observed several locations where the area below the grizzly was completely full of dirt and mud, rendering the grizzly ineffective.

A second method to control trackout is a vehicle wash station, where the vehicle is sprayed or rinsed off before it leaves the site. Truck wash stations are generally used for large facilities with significant truck traffic. These systems are very effective. Staff observed these truck wash stations at several locations, and they appeared to work well.

B. Regulatory History

Refer to the Background section of the staff report for proposed new Regulation 6, Section B for the broad review of the regulatory history.

C. Technical Review of Control Technologies

Refer to the Background section of the staff report for proposed new Regulation 6, Section C for the broad review of control technologies. There are no new innovative technologies used for controlling trackout. Water mist rather than water sprays may be useful in controlling dust in some instances, but generally the gravel, water (or other dust suppressants) currently used to stabilize unpaved roads and disturbed surfaces will continue to be required to prevent trackout.

III. PROPOSED AMENDMENTS

Air District staff is proposing new Rule 6-6 that prohibits trackout onto paved public roadways and, thereby, prevent visible fugitive dust emissions associated with such trackout. The principal elements of this proposal are to:

- Prohibit trackout onto paved roads. Limit any trackout at any exit from a site to less than cumulative 25 linear feet.
- Cleanup any excessive trackout that creates fugitive dust visible emissions within 4 hours.
- At the end of the workday, there should be no more than one quart of either wet or dry trackout at any exit from a site.
- Cleanup of trackout must be conducted to minimize any fugitive dust so that any fugitive dust does not exceed 20 percent opacity for more than three minutes within any 60-minute period.

Staff proposes Rule 6-6 become effective July 1, 2019. This provides more than enough time from adoption to improve facilities, management emphasis and training. All large facilities should already be complying with these requirements through their Storm Water Pollution Prevention Plans (SWPPP).

A. Purpose

The purpose of this proposed rule is to control a significant source of road dust: trackout of dirt, mud and industrial solids onto paved public roads where the solids can become pulverized, and entrained into the air as particulate matter.

B. Applicability

The proposed rule applies to bulk material sites, construction sites, and any facilities with disturbed surfaces (including landfills) where the total land area covered by bulk material handling operations, construction activities and/or disturbed surfaces at the site are one acre or larger. These large facilities tend to have substantial truck and vehicle traffic, creating the opportunity to track dirt, mud or other industrial solids out onto adjoining paved public roadways.

C. Exemptions

Exemptions are provided for two specific sources: metal recycling and shredding operations that are subject to the Regulation 6, Rule 4: Metal Recycling and Shredding Operations; and portland cement manufacturing that are currently subject to the provisions of Regulation 9, Rule 13: Nitrogen Oxides, Particulate Matter, and Toxic Air Contaminants from Portland Cement Manufacturing.

D. Major Definitions

The definitions in proposed new Regulation 6 apply to Rule 6-6.

“Bulk material” is defined as any unpackaged sand, soil, gravel, aggregate, solid construction material, solid industrial chemical or other unpackaged solids less than two inches in length or diameter.

A “bulk material site” is a site that stores or sells bulk materials with one or more stockpiles of bulk material where the stockpile greater than five feet high or has a footprint greater than 100 square feet.

A “construction site” is defined as any location where buildings, structures or improvements are being constructed, maintained, altered, remodeled, expanded or demolished. These sites include all contiguous and adjacent areas where related activities can take place.

A “disturbed surface site” is any land that has been physically moved, uncovered, destabilized, or otherwise modified from its natural conditions, making the surface subject to wind erosion, vehicle traffic or mechanical activities that generate fugitive dust.

A “large bulk material site,” “large construction site,” and “large disturbed surface site” are any site where the total land area of the site covered by bulk material handling operations, construction activities and/or disturbed surfaces at the site is greater than one acre.

“Trackout” is solid material from the site that adheres or agglomerates on the exterior of a motor vehicle (including tires), then subsequently falls onto a paved public roadway. This prohibition of trackout applies to all vehicles that exit the site onto a public roadway, and have the potential to create trackout.

E. Emission Limits

The limit for trackout is set in terms of the quantity of material that is allowable at the exit from a site. The intention is to allow a limited amount of trackout during the workday when active operations occur, but require cleanup by the end of the workday. If the amount of trackout becomes excessive during the workday, defined as more than a cumulative 25 linear feet (the length of visible material from both tire tracks), and the material is creating fugitive dust visible emissions, then the material needs to be cleaned up, i.e. not allowed to continue to lay on the roadway for the remainder of the workday. An example of excessive trackout is a set of two tire tracks leaving a site with 15 feet of visible material (two tracks X 15 feet = cumulative 30 feet).

Monitoring the site’s exits for trackout is required during the middle of the workday, and near the end of each workday. Cleanup of residual trackout is required at the end of the workday. Excessive residual trackout is any volume of material exceeding the volume of one quart (approximately 2.5 pounds of dry material, or 3.75 pounds of wet material). Recordkeeping is required to ensure that a facility holds itself accountable for meeting the monitoring and cleanup requirements.

Staff received questions about a method for measuring residual trackout. Staff offers the following guidance for collecting and measuring any residual trackout that remains on the paved public roadway (and paved shoulder of the paved public roadway) after cleanup:

1. Conduct cleanup of any trackout at the end of the workday using methods that best fit the specific circumstances. Clean up the paved shoulder and as much of the paved public roadway as safely possible given road and traffic conditions.
2. Check for residual trackout as follows:
    a. Use a whisk broom, standard broom, barn broom or push broom to manually sweep any visible residual trackout from the surface of the paved public roadway shoulder, and from as much of the paved public roadway as safely possible given road and traffic conditions;
    b. No visible mud, dirt, silt or dust should remain after sweeping. Mud, dirt, silt or dust may remain in the surface cracks of the paved shoulder and paved roadway;
    c. Collect the residual trackout in an industrial size dust pan, and pour the residual trackout from the dust pan into a 1 quart can;
    d. If the residual trackout fits within the 1 quart can, cleanup is complete;
    e. If the residual trackout exceeds the capacity of the 1 quart can, return to Step 1.

Each site is expected to control dust during cleanup activities to the extent possible so fugitive dust does not exceed 20 percent opacity for more than three minutes in any 60-minute period. Fugitive dust control measures are provided in the Staff Report for Regulation 6, Attachment 1-5.

F. Administrative Requirements

There are no administrative requirements proposed for this rule.

G. Monitoring and Records

Monitoring the conditions for potential trackout is required at twice each workday at the time when the potential for trackout is greatest. Any excessive trackout that creates fugitive dust must be cleaned up. All trackout must be cleaned up at the end of each workday. Records are required to document the active exit locations monitored each workday, and any occasion where excessive trackout is found and cleaned up. Records may be kept in electronic, paper hard copy or log-book format. The facility must retain the records for at least two years, and make them available to the APCO upon request.

H. Manual of Procedures

No additions or amendments to Compliance & Enforcement's MOP Vol. 1 are required. The procedure to assess excessive trackout includes measuring the cumulative linear feet of trackout, or the cumulative cross-sectional area of trackout. The procedure to assess the adequacy of cleanup is to ask the site to cleanup or sweep the exit area. The volume of trackout exceeds the standard if the material will not fit into a one-quart paint can.

I. Comparative Analysis

Proposed Rule 6-6: Prohibition of Trackout is analogous and consistent with South Coast Air Quality Management District Rule 403 and Rule 1158, and San Joaquin Valley Unified Air Pollution Control District Rule 8011 and Rule 8041. Rule 6-6 is also consistent with state water district SWPPP requirements that address fugitive dust from wind erosion and prohibition of trackout.

Proposed Rule 6-6 is no more stringent than the requirements included in SWPPP, but staff believes Air District enforcement personnel will be more effective in enforcing these requirements consistently throughout the Bay Area.

IV. EMISSIONS and EMISSIONS REDUCTIONS

Table IV-1 summarizes the estimated PM emission reductions anticipated from proposed new Rule 6-6, both in absolute terms and as a percentage of PM emissions within the Bay Area.

Table VI-1: Estimated Emissions Reductions from Proposed New Rule 6-6:

Source Categories	TSP tons per day	PM_{10} tons per day	$PM_{2.5}$ tons per day
Estimated Road Dust Reductions	2.69	1.23	0.18
% Reduction from Local Roads Category	12.5%	12.5%	12.5%
% Reduction from Road Dust Category	4.5%	4.5%	4.5%
% Reduction from Total PM Emissions	1.5%	1.2%	0.4%

Staff estimates that approximately 50 percent of current local road dust comes from trackout, with the remainder from spills, erosion, and degradation of the roads themselves. Proposed new Rule 6-6 requires large bulk material sites, large construction sites, and large disturbed surface sites to take steps to monitor and prevent trackout onto paved roadways, as outlined above. Staff estimates that very little trackout occurs from small bulk material sites, small construction sites, and small disturbed surface sites simply because they are small with very little vehicle traffic in and out. Staff has estimated emission reductions based on the large sites, with area greater than one acre.

Trackout prevention is currently required as part of a large site's SWPPP. Costs for compliance with new Rule 6-6 are (or should be) negligible if the facility is in compliance with SWPPP. However, staff estimates approximately one-third of sites are currently marginal or inadequate in their compliance with trackout requirements. Staff estimates that specific limits on trackout, monitoring and cleanup requirements will reduce PM emissions from the existing one-third marginal performers by approximately 25 percent. Twenty-five percent reduction in emissions from 50 percent of the road dust from local roads will result in emission reductions of 12.5 percent. Staff estimates a total reduction of 2.69 tpd of TSP, 1.23 tpd PM_{10}, and 0.18 tpd $PM_{2.5}$.

V. ECONOMIC IMPACTS

Trackout Prevention

Trackout at small bulk material sites, construction sites, and disturbed surface sites can be limited by careful use of water to control fugitive dust, and by limiting vehicle traffic to paved or stabilized roads. Any trackout that does occur can be cleaned up by a cleanup crew using hand brooms and shovels or dust pans. If small sites are not already doing this to meet the local trackout control ordinance, the costs for this cleanup is very low and can likely be incorporated into the duties of the existing workforce.

Trackout at large sites can be prevented by using "grizzly" bars or a "rumble grate" system. A grizzly system can be installed for approximately $10,000, with monthly cleaning required to provide an open catch basin below the grizzly for mud and dirt to fall into and away from the vehicle tires. Most large sites already have a grizzly system or a truck wash station. Annual costs

of operating a grizzly system are estimated to be $3,000 per year.[1] Estimated dust prevention from a grizzly system is six tpy.[2] Staff estimates that 50 percent of the dust is PM_{10}, and 10 percent of the dust is $PM_{2.5}$. Note – grizzly system effectiveness is very dependent on keeping the mud receiving area below the grizzly bars clean. Staff observed several grizzly systems that were no longer effective because the mud receiving catch basins were full. Staff estimates improved grizzly bar systems, or better facilities to remove the mud that is collected will be required at 100 facilities, costing at most $10,000 each in capital, totaling $1,000,000 in capital, and $300,000 per year in operating costs.

Truck wash stations are very effective at preventing trackout, and typically cost from $100,000 to 150,000 in capital[3], amortized to $30,000 per year. Water, power, maintenance, and mud cleanout and disposal increase the total costs to about $56,000 per year. These facilities need to have the mud removed weekly, typically removing 800 – 1,000 lbs. of solids. A large site may need two truck wash stations if they have high vehicle traffic. Staff estimates that few, if any large sites will need to install a truck wash system. However, assuming that ten sites determine it is more cost effective to use a truck wash rather than a grizzly system, the costs could be $1,500,000 capital, with annual costs totaling $560,000 or approximately $56,000 annual costs each.

Visible Road Dust Cleanup

Construction projects, counties and cities, and facilities handling bulk materials will all need to be prepared to clean up any dirt or other materials that may bypass the grizzly and wash stations, resulting in trackout on adjoining paved public roads. Management attention will be required to ensure that their site is not creating trackout, and ensure that any excessive trackout that does occur is cleaned up promptly, and clean up any significant trackout at the end of each workday. Estimated costs are described below.

One option for removing excessive trackout and clean up of all trackout at the end of each workday is to use a street sweeper. Street sweepers are available in three models: rotary brush models available with water sprays to prevent dust during the sweeping operation; vacuum systems with high efficiency air filters to capture and contain more than 80 percent of PM_{10}; and regenerative vacuum sweepers that blow air onto the roadway to dislodge dirt and silt out of cracks in the road before vacuuming. Conventional street sweepers are estimated to cost $250,000, although they do a very poor job of capturing and controlling visible road dust and will probably not prevent dust plumes when sweeping. Regenerative PM_{10} efficient street sweepers are estimated to cost $450,000. Amortized cost is approximately $80,000 per year, plus an additional $150,000 per year for an operator, fuel and maintenance. Sites that are effective at preventing trackout will not need a regenerative PM_{10} efficient street sweeper.

A simpler option is to send a worker to shovel and sweep up any excessive trackout, and sweep up the area at the end of the workday. Estimated cost for cleanup of 50 square feet of excessive trackout or spills is $75 (one worker for 1 hour, plus hand tools) each workday, totaling $15,000 per year (typically 200 dry workdays each year). Most large facilities already conduct cleanup at the end of each workday (or should be doing so to meet the requirements of the SWPPP). Staff estimates no more than an incremental 10 percent of these costs will actually accrue when management and workers are committed to preventing, monitoring and cleaning up trackout. Staff estimates large facilities with effective truck wash systems will not have to do any cleanup. Staff estimates that 200 facilities with effective grizzly systems will have to do minor cleanup at the end of each workday, with total incremental costs for these facilities equal to 10% X $3,000,000 = $300,000 annual costs, or $1,500 per year at each site.

[1] CASQA TC-1 fact sheet: $2400 installation and maintenance costs per entrance/exit

[2] Based on 500 lbs. solids removal per week, all potentially converted to silt by vehicle traffic, and 50 percent of silt entrained into the air as fugitive dust.

[3] $125,000 installed cost at PG&E Power Station cleanup at Hunter's Point

Total costs for implementation of draft new Rule 6-6 are estimated to be $2,500,000 capital, and $1,160,000 annual operating costs to achieve emission reductions of 2.69 tpd TSP, 1.23 tpd PM_{10}, and 0.16 tpd $PM_{2.5}$. Assuming 200 dry days per year here in the Bay Area, expected emission reductions are 246 tpy of PM_{10}, and 36 tpy of $PM_{2.5}$.

A. Cost Effectiveness

Cost effectiveness is an indicator of the efficacy of the draft rule. Staff estimates the cost effectiveness of this proposal is $1,160,000 annual costs divided by 246 tons per year of PM_{10} reductions. Cost effectiveness is $4,715 per ton of PM_{10} reduced. Focused specifically on the 36 tpy of $PM_{2.5}$ of emission reductions, cost effectiveness is $1,160,000 annual costs divided by 36 tons per year of $PM_{2.5}$ reductions. Cost effectiveness is $32,222 per ton of $PM_{2.5}$ reduced.

B. Incremental Cost Effectiveness

The next increment of making Rule 6-6 more stringent would be applying the prohibition of trackout to all bulk material sites, construction sites, and disturbed surface sites, rather than just the large sites with area greater than one acre. This would include approximately 1,000 additional sites that would need to add grizzly systems to their exits, and adopt management processes to monitor and cleanup trackout when it occurs.

Costs for 1,000 additional sites at $10,000 capital cost and $3,000 annual cost each total to $10,000,000 capital, and $3,000,000 annually. Incremental PM emissions reductions are estimated to increase no more than 25 percent of the current estimates, equaling 62 tpy of PM_{10}, and 9 tpy of $PM_{2.5}$. Incremental cost effectiveness for applying Rule 6-6 to all sites is $48,400 per ton of PM_{10} reduced, and $333,333 per ton of $PM_{2.5}$ reduced. Staff does not recommend applying Rule 6-6 to the smaller bulk material, construction and disturbed surface sites.

C. Socioeconomic Impacts

The Air District contracts with an independent consultant to conduct a socioeconomic analysis of potential economic impacts from new draft Rule 6-6. After staff received additional input during the workshop process, a proposal and staff report have been used to finalize the Socioeconomic Analysis. The Socioeconomic Analysis is included in the final proposal, posted for public review and comment at least 30 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposal and public input before taking any action on proposed new Rule 6-6. The Socioeconomic Impact Analysis is included as Appendix A.

The Socioeconomic Analysis concludes that control costs are less than significant, will not impact small businesses, and will not lead to job reductions.

D. District Impacts

Compliance and Enforcement inspectors will need to monitor approximately 150 – 250 large bulk material sites, large construction sites and large disturbed surface sites for trackout, and will need to respond to citizen complaints of localized fugitive dust from trackout. Compliance and Enforcement currently conducts planned inspections of bulk material sites and permitted disturbed surface sites as part of their annual coverage of all permitted facilities. Compliance and Enforcement does not currently plan to proactively monitor and visit construction sites, but will be aware of trackout, and any localized fugitive dust plumes that emanate from trackout, and will be prepared to investigate citizen complaints as needed. The Air District does not intend to hire additional inspectors to provide resources for this work, and anticipates being able to fit trackout issues into the normal work schedule as needed.

Compliance and Enforcement needs no new equipment or procedures for assessing trackout. Inspectors already carry quart cans for measurement of any remaining roadway material. Inspectors have been equipped with tape measures to measure linear feet or square feet of trackout. Costs for these tape measures totaled $700 at $10 each for 70 inspectors.

VI. REGULATORY IMPACTS

Regulatory impact analysis is required by H&SC Section 40727.2, comparing the proposal to other Air District, State and federal rules addressing the same sources. The following table provides this regulatory impact analysis.

Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout - H&SC Section 40727.2 Regulatory Analysis

Section	**Description** (paraphrased)	Comparable State or Air District Provision	Comparable Federal Provision	Discussion
101	Description / Purpose	SCAQMD Rule 403 SJVUAPCD Rule 8041		Purpose consistent
102	Applicability			
110	Exemption for Activities Subject to Other Rules			
200	Definitions	SCAQMD Rule 102 SCAQMD Rule 403 SJVUAPCD Rule 8011		Definitions consistent
301	Prohibition of Trackout	SCAQMD Rule 403 SCAQMD Rule 1158 SJVUAPCD Rule 8011 SJVUAPCD Rule 8041	AP-42 DRAFT Section 13.2.1: Paved Roads	SCAQMD extends trackout requirements to 25 feet from exit. SJVUAPCD extends trackout requirements to 50 feet from exit.
302	Cleanup of Trackout	Consistent with control measures identified in SCAQMD Rule 403		Consistent with Regulation 6 control measures cited in Attachment 1-5.
400	Administrative Requirements	per Reg 6.		Must have ability to observe limit or requirement
500	Monitoring and Records	SJVUAPCD Rule 8011		Consistent monitoring and records requirements
600	Manual of Procedures	SCAQMD Rule 403 SCAQMD Rule 1158 SJVUAPCD Rule 8011 SJVUAPCD Rule 8041		Assessment of trackout exceeding 25 linear feet or 25 square feet. End of day cleanup threshold of no more than 1 quart of material.

VII. ENVIRONMENTAL IMPACTS

Review of Potential Environmental Impacts Under CEQA

The Air District contracts with an independent consultant to conduct a California Environmental Quality Act (CEQA) analysis of potential environmental impacts from the proposed new Regulation 6, Rule 6. The consultant has made an initial assessment of any environmental impacts based on proposed new Rule 6-6 and this staff report.

Similarly, CEQA environmental analyses have been conducted on the proposed new Regulation 6, and amendments to Rule 6-1. The CEQA analysis, attached as Appendix B, combines these analyses to review all impacts of the proposed new Regulation 6, amendments to Rule 6-1, and new Rule 6-6 together all as one project, so that the cumulative impact of these proposals can be evaluated and considered.

The CEQA analysis shows that no significant environmental impacts are expected and, consequently, a Negative Declaration has been prepared. The CEQA Negative Declaration will be included with the final proposal and posted for public review and comment at least 30 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposal, and public input before taking any action on the proposed new Rule 6-6, the new Regulation 6, and amendments to Rule 6-1.

VIII. RULE DEVELOPMENT / PUBLIC PARTICIPATION PROCESS

Rule Development Process

The Air District's 2010 Clean Air Plan addressed PM, including PM's significant health impacts, and was approved on September 15, 2010. The 2010 Clean Air Plan included Stationary Source Measure SSM 6: General Particulate Matter Emission Limitation and subsequently identified as Stationary Source Measure SS31 in the Air District's 2017 Clean Air Plan. In addition to developing proposed amendments to Rule 6-1 to satisfy SS31, staff identified potential emission reductions from this rule project by reviewing the entire inventory of PM emissions and identified source categories where PM (particularly $PM_{2.5}$) emissions are significant, the Air District has authority, and potential for substantial PM reductions are available.

Staff based proposed Rule 6-6 on the 2011 emissions inventory. Staff identified the source categories to be considered during review of potential amendments, and identified the largest sources in each category. Staff selected 55 of the largest permitted stationary sources, and visited each one to more fully understand each facility's business, each unique emissions source and discuss potential control techniques available to reduce PM emissions. In addition, concerns about the lack of information regarding particle size distribution, possible sources of condensable particulate matter, and potential secondary particulate matter formation were discussed. Staff visited eight facilities that store and handle petroleum coke and coal to ensure the unique issues with these solids were incorporated into the rule development process. Staff used the information from these visits to develop the proposed new Rule 6-6 and to estimate the emission reductions that could be achieved.

Staff conducted eight workshops throughout the Bay Area from January 30 – February 8, 2017. These workshops were conducted in parallel with Open House forums for the 2017 Clean Air Plan. Many stakeholders voiced concern that the PM workshops were diminished by being scheduled with the Clean Air Plan Open Houses, and the combined Open House / workshop

format prevented staff from making a formal presentation regarding the preliminary drafts of each rule or engaging in direct questions / answers. Others felt the personal interaction with staff regarding the preliminary drafts for each rule provided better opportunity for genuine discussion, including questions / answers.

Comments received after the workshops provided additional input regarding the process used for outreach to the wide variety of affected parties. Many indicated that they had not heard about the workshops at all, or only at the last minute. The Public Outreach and Consultation process described below in Section B was not considered satisfactory to some stakeholders, so staff will mail Public Hearing notices to each Air District permitted facility with any significant PM emissions, and mail Public Hearing notices to additional facilities with similar Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) codes from a business database used by the Socioeconomic Analysis contractor called InfoUSA, including construction firms.

Proposed new Rule 6-6 and this accompanying staff report are the next step in the rule development process. Staff anticipates that proposed new Regulation 6, and amendments to Rule 6-1 will be considered together at a public hearing. The consideration of proposed new Rule 6-6 and associated staff report may also be considered at that Public Hearing.

B. Public Outreach and Consultation

In analyzing the inventory of PM emissions and source categories where PM (particularly $PM_{2.5}$) emissions are significant, where the Air District has authority, and the potential for substantial PM reductions, staff consulted with the following interested and affected parties:

Businesses	Governmental Agencies
Morton Salt - Newark	CALTRANS District 4 - Oakland
Cargill – Newark	Bay Area Regional Water Quality Board - Oakland
Criterion Catalysts - Pittsburg	North Coast Regional Water Quality Board – Santa Rosa
CertainTeed Gypsum – Napa	Bay Area Rapid Transit – Richmond Maintenance Yard
Maxwell House – San Leandro	Alameda County
C & H Sugar – Crockett	Contra Costa County
Con Agra – Oakland	Marin County
CEMEX – Oakland	Napa County
CEMEX – Clayton	Santa Clara County
Strategic Materials – San Leandro	San Francisco City & County
Dutra Materials – San Rafael	San Mateo County
Superior Supplies – Santa Rosa	Solano County
Granite Rock – Redwood City	Sonoma County
Hanson Aggregates – Clayton	City of Hayward
Bodean / Mark West Quarry – Santa Rosa	City of Napa
PABCO Gypsum – Redwood City	City of Oakland
Georgia Pacific Gypsum - Antioch	City of San Jose
Syar - Napa	City of San Rafael

Syar – Santa Rosa	City of Santa Rosa
Syar - Vallejo	
Soiland Quarry - Cotati	
Langley Hill Quarry - Woodside	**Industry Associations**
Granite Construction – Santa Clara	Association of Building Contractors
Granite Construction – San Jose	Associated Roofing Contractors of the Bay Area Counties
Willowbrook Feeds – Petaluma	California Asphalt Pavement Association
Hunt & Behrens – Petaluma	Construction Industry Air Quality Coalition
Owens-Corning – Santa Clara	Northern California Engineering Contractors
Owens-Brockway - Oakland	
Waste Management – San Leandro	
Zanker Road Material Processing – San Jose	
Waste Management - Altamont	
Redwood Landfill	
Guadalupe Landfill	
Ox Mountain Landfill – Half Moon Bay	
Clover Flat / Upper Valley Resources	
Potrero Hills Landfill	
Stavin	
McGuire & Hester Construction - Oakland	
Ghilotti Bros. Construction – San Rafael	
Universal Building Services - Richmond	
Statewide Sweeping – Milpitas	
Levin Richmond Terminal	
Lehigh Cement	
Phillips 66 Coker	
Phillips 66 Coke Calciner	
Shell Coker	
Tesoro Coker	
Valero Fluid Coker	
APS West	
Carbon Inc.	

These discussions led to review of the SWPPP Best Management Practices, and the suggestion that any new requirements should be consistent with SWPPP requirements.

As described above, feedback indicates that many considered the outreach to be inadequate. Public Hearing notices will be mailed to all Air District permitted facilities with significant PM emissions, and to all entities with similar Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) codes from a business database used by the Socioeconomic Analysis contractor called InfoUSA, including construction firms.

Public Hearings are the next step in the rulemaking process. Air District staff will publish the Public Hearing package for proposed new Regulation 6: Particulate Matter, Rule 6: Prohibition of Trackout. Air District staff will accept written comments, will respond to all comments received

and will present final proposals to the Air District's Board of Directors for their consideration. Response to comments is included as Appendix A of this staff report.

IX. CONCLUSION / RECOMMENDATIONS

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. This section addresses each of these findings.

A. Necessity

"'Necessity' means that a need exists for the regulation, or for its amendment or repeal, as demonstrated by the record of the rulemaking authority." H&SC section 40727(b)(1).

Proposed new Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout is needed to address the significant PM emissions source category of road dust. SWPPP are currently required for construction sites larger than one acre by the State Water Resources Control Board by authority of State General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ, amended by 2010-0014-DWQ & 2012-0006-DWQ). While SWPPP's can also prohibit trackout, proposed new Rule 6-6 requires specific monitoring, and clean up actions if trackout is excessive, as well as clean up of trackout at the end of each workday. The Bay Area is not yet in attainment for either PM_{10} or $PM_{2.5}$ California Ambient Air Quality Standards.

B. Authority

"'Authority' means that a provision of law or of a state or federal regulation permits or requires the regional agency to adopt, amend, or repeal the regulation." H&SC section 40727(b)(2)

The Air District has the authority to adopt this rule under Sections 40000, 40001, 40702, and 40725 through 40728.5 of the California Health and Safety Code.

C. Clarity

"'Clarity' means that the regulation is written or displayed so that its meaning can be easily understood by the persons directly affected by it." H&SC Section 40727(b)(3)

Proposed new Regulation 6, Rule 6 is written so that its meaning can be easily understood by the persons directly affected by them. Further details in the staff report clarify the proposal, affected emission sources, compliance options, and administrative requirements for the industries subject to this rule.

D. Consistency

"'Consistency' means that the regulation is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations." H&SC Section 40727(b)(4)

The proposed new rule is consistent with other Air District rules, and not in conflict with state or federal law.

E. Non-Duplication

"'Nonduplication' means that a regulation does not impose the same requirements as an existing state or federal regulation unless a district finds that the requirements are necessary or proper to execute the powers and duties granted to, and imposed upon, a district." H&SC Section 40727(b)(5)

Proposed new Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout is needed to address the significant PM emissions source category of road dust. SWPPPs are currently required for construction sites larger than one acre by the State Water Resources Control Board by authority of State General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ, amended by 2010-0014-DWQ & 2012-0006-DWQ). While SWPPP's can also prohibit trackout, proposed new Rule 6-6 requires specific monitoring, and cleanup actions if trackout is excessive, as well as cleanup of trackout at the end of each workday. The Bay Area is not yet in attainment for either PM_{10} or $PM_{2.5}$ California Ambient Air Quality Standards. Proposed new Rule 6-6 is non-duplicative of other statutes, rules or regulations. To the extent duplication exists, such duplication is appropriate for execution of powers and duties granted to, and imposed upon the Air District.

F. Reference

"'Reference' means the statute, court decision, or other provision of law that the district implements, interprets, or makes specific by adopting, amending, or repealing a regulation." H&SC Section 40727(b)(6)

The proposed rule has met all legal noticing requirements, has been discussed with the regulated community and other interested parties, and reflects consideration of the input and comments of many affected and interested stakeholders.

G. Recommendations

Air District staff recommends adoption of proposed Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout and approval of the CEQA Negative Declaration.

REFERENCES

1. BAAQMD 2010 Clean Air Plan, September 15, 2010
2. BAAQMD Regulation 5: Open Burning
3. BAAQMD Regulation 6, Rule 2: Commercial Cooking Equipment
4. BAAQMD Regulation 6, Rule 3: Wood Burning Devices
5. BAAQMD Regulation 12, Rule 4: Sandblasting
6. BAAQMD Board Resolution 1390
7. BAAQMD Advisory Council, Ultrafine Particles: Ambient Monitoring and Field Studies presentation, 2/8/2012
8. BAAQMD Advisory Council, Ultrafine Particles: Ambient Monitoring and Field Studies presentation, Philip M. Fine, SCAQMD, 2/8/2012
9. BAAQMD Advisory Council, Concentrations of Ultrafine Particles and Related Air Pollutants on and Near Roadways and Other Urban Microenvironments presentation, Eric Fujita, Desert Research Institute, Reno, NV, 2/8/2012
10. EPA Stationary Source Control Techniques Document for Fine Particulate Matter, October 1998
11. EPA Test Methods 5, 5B, 5F, 9, 17, 22
12. EPA Test Methods 201A, 202, 203A, 203B, 203C
13. EPA RACT/BACT/LAER Clearinghouse
14. EPA AP42, Fifth Edition, Volume 1, Chapter 13: Miscellaneous Sources, 13.2
15. EPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures; EPA-450-92-004; September 1992.
16. California Health and Safety Code, §41700
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18. California Air Resources Board - CALIFORNIA EMISSION INVENTORY AND REPORTING SYSTEM (CEIDARS), Particulate Matter (PM) Speciation Profiles, 7/28/2009
19. South Coast Air Quality Management District, Rules 401, 403, 403-1, 404, 405, 444, 445, 1105-1, 1112-1, 1133-1, 1137, 1155, 1156, 1157, 1158, 1186, 1186-1
20. San Joaquin Valley Air Pollution Control District, Rules 4101, 4103, 4106, 4201, 4202, 4203, 4303, 4901, 8011, 8021, 8031, 8041, 8051, 8061, 8071, 8081
21. San Joaquin Valley Air Pollution Control District, Draft Staff Report, BACM Amendments to Regulation VIII (Fugitive PM_{10} Prohibitions), 9/27/2001
22. San Joaquin Valley Air Pollution Control District, Draft Staff Report – Appendix C, Cost Effectiveness Analysis of Regulation VIII (Fugitive PM_{10} Prohibitions), 9/27/2001
23. Sacramento Air Quality Management District, Rules 401, 403, 404, 405, 406, 407, 409, 417, 421
24. Maricopa County, Arizona Regulation III, Rule 310: Fugitive Dust from Dust-Generating Operations
25. Maricopa County, Arizona Quick Reference Dust Control Guide
26. Northeast States for Coordinated Air Use Management, Assessment of Control Technology Options for BART-Eligible Sources, March 2005

27. California Water Resources Control Board, Construction Storm Water Program, http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml
28. 2009-0009-DWQ Construction general permit *(effective July 1, 2010)*
29. California Storm Water Quality Association, Storm water Best Management Practice Handbook Portal: Construction

APPENDICES

A. Comments and Responses
B. Socioeconomic Analysis
C. CEQA Documents

October 25, 2017

Socioeconomic Impact Analysis: Proposed New Regulation 6 (Common Definitions and Test Methods) and Proposed Amendments to Regulation 6, Rule 1 (General Requirements)

Prepared for:

Bay Area Air Quality Management District

Prepared by:

Applied Development Economics, Inc.
1756 Lacassie Avenue, #100, Walnut Creek, CA 94596 ■ 925.934.8712
www.adeusa.com

ADE - 30 YEARS OF SERVICE

APPLIED DEVELOPMENT ECONOMICS

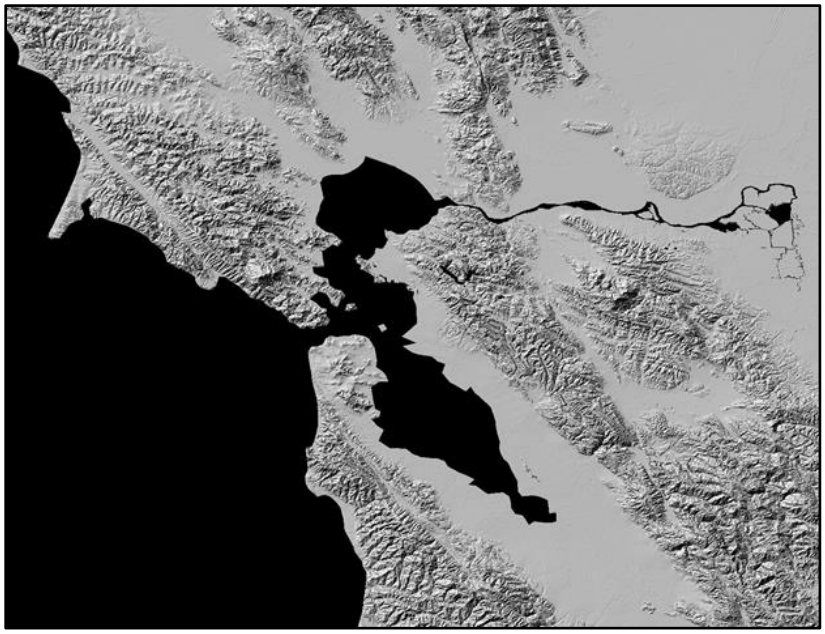
BAY AREA GREEN BUSINESS

TABLE OF CONTENTS

1. INTRODUCTION

The Bay Area Air Quality Management District ("Air District") is proposing a new Regulation 6 ("Regulation 6: Common Definitions and Test Methods ") to provide common definitions, administrative requirements and test methods that apply to existing Regulation 6 rules and any other source-specific rules as they are developed in the future. In addition, the Air District seeks to amend Regulation 6, Rule 1: General Requirements, particularly with respect to updating particulate standards that are stringent enough to protect the health of Bay Area residents. Included in proposed changes to Reg. 6, Rule 1 is proposed amendment, Section 6-1-307, which is a new requirements to control particulate matter pertaining to bulk material storage and handling. This report analyzes the socioeconomic impacts associated with the proposed new regulation and amendments.

After this introduction, this report discusses the proposed revisions in greater detail (Section Two). After that discussion, the report describes the socioeconomic impact analysis methodology and data sources (Section Three). The report describes population and economic trends in the nine-county San Francisco Bay Area (Section Four), which serves as a backdrop against which the Air District is contemplating its various rule changes. Finally, the socioeconomic impacts stemming from the regulatory proposals are discussed in Section Five. The report is prepared pursuant to Section 40728.5 of the California Health and Safety Code, which requires an assessment of socioeconomic impacts of proposed air quality rules. The findings in this report can assist Air District staff in understanding the socioeconomic impacts of the proposed requirements, and can assist staff in preparing a refined version of the rule. Figure 1 is a map of the nine-county region that comprises the San Francisco Bay Area Air Basin.



2. OVERVIEW OF PROPOSED NEW REGULATION 6 AND PROPOSED AMENDMENTS TO REGULATION 6, RULE 1

The Air District is proposing a new Regulation 6: Common Definitions and Test Methods ("Reg. 6") to provide definitions; monitoring requirements and test methods that apply to all Regulation 6, Particulate Matter regulations. Proposed new Reg. 6 includes the following:

- Common definitions that apply to all particulate matter rules: This approach standardizes the definitions and provides a single reference location for these definitions. Definitions can be compromised when located in several source-specific rules, where version control is difficult.
- A common expectation of monitoring the emission or specific limitation as needed to ensure compliance.
- Source test methods that apply to all or most individual particulate matter rules. Similarly, this approach standardizes test methods and provides a single reference location for these test methods.

In addition to new Reg. 6, Staff proposes amendments to Rule 6-1 because its particulate standards have not been updated in decades; other air districts in California have more stringent standards; and amendments are needed to ensure the Bay Area standards are health-protective. Control technology is available that facilities can use to comply at a reasonable cost and the revised standards will obtain $PM_{2.5}$ reductions that will help the Air District achieve its health-based $PM_{2.5}$ goals. As part of the Rule 6-1 proposed amendment, the Air District is proposing a new section for Rule 6-1, Section 6-1-307) that addresses fugitive dust from active operations and from wind erosion of bulk material storage piles, disturbed surfaces, and any other activities where the solids can be exposed to the wind by setting limits on any allowable fugitive dust plume, and by prohibiting any visible emissions of fugitive dust from traveling or carrying beyond the site property.

COST OF COMPLIANCE

Regulation 6 is a foundational regulation for the existing particulate matter rules, and any new source-specific rules that may be developed in the future. No controls are required from proposed new Reg. 6, so no costs are incurred. Future administrative costs are expected to be reduced with definitions, monitoring requirements and test methods located in one regulation, rather than being repeated.

As for proposed amendments to Regulation 6-1, there are a set of costs associated with proposed amendment, Section 6-1-307. This new section to Regulation 6-1 will affect approximately 120 facilities that store and handle bulk materials, ten of which handle petroleum coke, and three facilities

that store and handle coal. Approximately 40 of these facilities already have controls for fugitive dust, mostly water sprays.

Air District staff has identified approximately 90 sources which, in adopting Reg. 6-1-307-related controls, would incur an estimated $1.7 million in total capital costs (Table 1). Emission reduction estimates generated by BAAQMD assume half of these 90 sources will find ways to meet the opacity limit and other requirements without having to install significant controls. Thus, the Air District assumes that only half of the controls shown below will actually be installed.

Table 1- Total Capital Cost of Compliance: Proposed Amendment Section 6-1-307

	Controls\ Facilities	Total Capital Cost
Total	123	$1,701,600
Windscreen or shroud for storage	13	$36,000
Windscreen or shroud for handling	21	$90,000
Windscreen for stockpile	11	$448,000
Windscreen for screener	9	$37,800
Windscreen for grinder	2	$5,400
Windscreen for conveyor and transfer points	16	$108,000
Windscreen for loading\unloading	3	$10,800
Portable shroud, chute for loading\unloading	5	$90,000
Windscreen for presser	1	$1,800
Windscreen for mixer	1	$1,800
Windscreen for dryer	2	$7,200
Water mist	33	$693,000
Water fog system	6	$171,800

Source: BAAQMD (see Attachment 2: STAFF REPORT – PARTICULATE MATTER: Draft Amendments to Regulation 6, Rule 1: General Requirements [2017 Clean Air Plan, Control Measure SS31], pages 32 to 39).

METHODOLOGY

Applied Development Economics (ADE) typically begins its impact analysis by preparing a statistical description of the industries affected by proposed rules and amendments, analyzing data on the number of establishments, jobs, and payroll. We also estimated sales generated by impacted industries. To generate its estimates, ADE relies on the most current data available from a variety of sources, particularly the State of California's Employment Development Department (EDD) Labor Market Information Division, the US Census County Business Patterns, and the US Internal Revenue Service. When presented with a list of specific firms affected by proposed new regulations, ADE also analyzes firm-specific data from private data vendors, such as InfoUSA.

When compliance cost information is readily available, ADE then compares costs against net profits, in the case of private sector entities affected by proposed rules, with the results of socioeconomic analysis shows what proportion of profits the compliance costs represent. Based on assumed thresholds of significance, ADE discusses in the report whether the affected sources are likely to reduce jobs as a means of recouping the cost of rule compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the jobs losses are estimated using a regional IMPLAN input-output model. In the case of impacts borne by public sector entities, ADE analyzes whether affected sources can cover costs a combination of sources' annual revenues and fund balance reserves.

When analyzing the socioeconomic impacts of proposed new rules and amendments, ADE attempts to work closely within the parameters of accepted methodologies discussed in a 1995 California Air Resources Board (ARB) report called "Development of a Methodology to Assess the Economic Impact Required by SB513/AB969" (by Peter Berck, PhD, UC Berkeley Department of Agricultural and Resources Economics, Contract No. 93-314, August 1995). The author of this report reviewed a methodology to assess the impact that California Environmental Protection Agency proposed regulations would have on the ability of California businesses to compete. The ARB has incorporated the methodologies described in this report in its own assessment of socioeconomic impacts of rules generated by the ARB. One methodology relates to determining a level above or below which a rule and its associated costs is deemed to have significant impacts. When analyzing the degree to which its rules are significant or insignificant, the ARB employs a threshold of significance that ADE follows. Berck reviewed the threshold in his analysis and wrote, "The Air Resources Board's (ARB) use of a 10 percent change in [Return on Equity] ROE (i.e. a change in ROE from 10 percent to a ROE of 9 percent) as a threshold for a finding of no significant, adverse impact on either competitiveness or jobs seems reasonable or even conservative."

4. ECONOMIC AND DEMOGRAPHIC TRENDS

This section of the report discusses the larger context within which the Air District is contemplating proposed New Regulation 6 (Common Definitions and Test Methods) and proposed Amendments to Regulation 6, Rule 1 (General Requirements). This section begins with a broad overview of demographic and economic trends, with discussion then narrowing to industries and sources affected by the proposed rule changes.

REGIONAL POPULATION TRENDS

Table 2 tracks population growth in the nine-county San Francisco Bay Area between 2007 and 2017, including data for the year 2012. Between 2007 and 2017, the region grew by approximately 0.5 percent a year. Between 2012 and 2017, the region grew annually at a somewhat faster rate of 0.9 percent per year. Overall, there are 7,714,638 people in the region. At 1,938,180, Santa Clara County has the most people, while Napa has the least, at 142,408. Alameda and Contra Costa Counties grew the fastest between 2012 and 2017, at 1.3 percent a year, while Marin and Napa grew by the slowest rate (0.6 percent a year) over the same period.

Table 2: Population Trends: Bay Area Counties, Region, and California

JURISDICTION	2007	2012	2017	07-12 CAGR	12-17 CAGR	07-17 CAGR
California	37,463,609	37,881,357	39,523,613	0.2%	0.9%	0.5%
SF Bay Area	7,122,615	7,300,094	7,714,638	0.5%	1.1%	0.8%
Alameda	1,519,250	1,543,027	1,645,359	0.3%	1.3%	0.8%
Contra Costa	1,035,097	1,069,977	1,139,513	0.7%	1.3%	1.0%
Marin	254,532	255,812	263,604	0.1%	0.6%	0.4%
Napa	134,726	138,074	142,408	0.5%	0.6%	0.6%
San Francisco	823,940	826,103	874,228	0.1%	1.1%	0.6%
San Mateo	727,719	735,256	770,203	0.2%	0.9%	0.6%
Santa Clara	1,797,623	1,828,496	1,938,180	0.3%	1.2%	0.8%
Solano	422,646	415,862	436,023	-0.3%	1.0%	0.3%
Sonoma	478,935	487,487	505,120	0.4%	0.7%	0.5%

Source: ADE, Inc., based on California Dept. of Finance E-5 Reports (note: CAGR = compound annual growth rate)

REGIONAL ECONOMIC TRENDS

Data in Table 3 describe the larger economic context within which officials are contemplating the proposed new Regulation 6 and amendments to Regulation 6, Rule 1, including proposed amendment Section 6-1-307. Businesses in the region employ over three and a half million workers, or 3,611,076. Of the 3,611,076 workers, 157,408 or 4.4 percent, are civil servants in the public sector (109,269 are local government employees and 48,140 are state and federal workers). This figure does not include public sector education employees, who were combined with private sector education employees in an

effort to present a picture as to the total number of persons in education in the Bay Area. There are 145,498 employees in "Education: elementary and secondary", and another 77,514 in "Education: post-secondary", for a total of 223,012 (or 6.2 percent). For the same reason, we combined public sector workers in health care with private sector workers in health.

Table 3 — San Francisco Bay Area Employment Trends By Sector: 2006 - 2016

	Industry Sector	2006	2011	2016	2016	2016 CA	SFBA CAGR* 06-11	SFBA CAGR 11-16	CA CAGR 11-16
Total		3,150,735	3,040,409	3,672,206	100.00%	100%	-0.7%	3.8%	2.7%
11	Agriculture	20,450	19,231	20,317	0.6%	2.5%	-1.2%	1.1%	1.6%
21	Mining	2,047	1,977	1,638	0.0%	0.1%	-0.7%	-3.7%	-2.8%
22	Utilities	15,689	18,940	18,705	0.5%	0.6%	3.8%	-0.2%	0.3%
23	Construction	192,897	130,376	184,119	5.0%	4.6%	-7.5%	7.1%	6.5%
31-33	Manufacturing	352,040	311,361	335,243	9.1%	7.8%	-2.4%	1.5%	0.9%
42	Wholesale	125,200	113,953	128,274	3.5%	4.3%	-1.9%	2.4%	1.8%
44-45	Retail	336,232	311,906	343,504	9.4%	10.0%	-1.5%	1.9%	1.7%
48-49	Transportation and	85,970	76,695	89,958	2.4%	3.0%	-2.3%	3.2%	4.7%
51	Information	112,820	116,668	172,891	4.7%	3.1%	0.7%	8.2%	3.8%
52	Finance and Insurance	151,360	118,888	129,338	3.5%	3.2%	-4.7%	1.7%	0.9%
53	Real Estate	62,020	52,139	58,855	1.6%	1.7%	-3.4%	2.5%	2.2%
54	Prof., Scientific, Tech.	312,042	339,865	436,816	11.9%	7.3%	1.7%	5.1%	2.8%
55	Mgt. of Companies	56,807	60,196	72,498	2.0%	1.4%	1.2%	3.8%	2.8%
561	Admin. Support	175,238	158,050	200,162	5.5%	6.2%	-2.0%	4.8%	4.4%
562	Waste Management	10,482	11,105	12,499	0.3%	0.3%	1.2%	2.4%	3.0%
6111	Education - elem., sec.	123,430	120,714	145,498	4.0%	5.3%	-0.4%	3.8%	1.6%
6112-6117	Education - post-sec.	68,644	69,239	77,514	2.1%	3.1%	0.2%	2.3%	1.0%
62	Health	345,833	384,305	469,975	12.8%	14.1%	2.1%	4.1%	3.8%
71	Arts, Entert., Recreation	50,976	52,549	61,090	1.7%	1.8%	0.6%	3.1%	3.7%
721	Accommodations	222,418	236,326	300,218	8.2%	1.3%	-0.4%	1.9%	2.2%
722	Food, drinking	47,380	46,522	51,100	1.4%	8.1%	1.2%	4.9%	4.6%
81	Other service***	105,108	105,729	123,827	3.4%	3.1%	0.1%	3.2%	2.9%
92	Public: Local Govt.**	116,196	105,061	109,269	3.0%	3.9%	-2.0%	0.8%	0.5%
92	Public: State and Federal**	59,325	66,047	48,140	3.0%	2.5%	2.2%	-6.1%	-0.7%
99	Unclassified	131	12,567	19,630	0.5%	0.6%	149.1%	9.3%	7.4%

*Source: Applied Development Economics, Inc. based on California EDD LMID QCEW (http://www.labormarketinfo.edd.ca.gov/qcew/cew-select.asp). *Note: CAGR = compound annual growth rate. **Note: EDD LMID public education (elementary, secondary, and post-secondary), public health, and public utilities employment data moved out of local, state and federal public administration categories and into their corresponding private categories above, in an effort to accurately profile employment trends by sector. ***Note: in 2013, the US BLS moved a large portion of NAICS 814110 (private households) to NAICS 624120 (Support to elderly persons and persons with disabilities): the totals above account for that adjustment for 2006 and 2011.*

The top-five sectors in the Bay Area in terms of total number of workers are Health and Social Assistance (NAICS 62) (469,75 workers), Professional/Technical Services (NAICS 54) (436,816 workers), Retail (NAICS 44-45) (343,504), Manufacturing (NAICS 31-33) (335,243) and Food Services (300,218). Of the top-ten leading sectors in terms of employment, six exhibited high rates of annual growth from 2010 to 2015, growing annually by more than four percent. These sectors are Health and Social Assistance (4.1 percent per year), Professional/Technical Services (5.1 percent), Food Services (4.9 percent), Administrative Support (NAICS 561) (4.8 percent), Construction (NAICS 23) (7.1

percent per year) and Information (NAICS 51), which grew at a phenomenal annual rate of 8.2 percent. Combined, these five sectors employ 49 percent of total employment, or 1,764,180 out of 3,611,076. The table also demonstrates the advanced nature of the regional economy, as 12.1 percent of all workers are in the Professional, Scientific and Technical (NAICS 54), whereas in the state as a whole, 7.3 percent of all workers are in this sector. Interestingly, at 1.5 percent per year, manufacturing employment growth in the Bay Area almost doubled statewide manufacturing growth rates (0.9 percent), underscoring the diversity of the regional economy.

TYPES OF INDUSTRIES SUBJECT TO SECTION 6-1-307

As indicated above, Air District staff has identified approximately 90 sources requiring over 120 controls related to proposed amendments to Rule 6-1 having to do with bulk material storage and handling. Slightly over 40 specific firms operate these 90 sources. These firms are spread across 25 different industries (Table 4). The table below includes capital costs stemming from the proposed amendments, which is annualized. It is important to note that the annual capital cost assumes that only half of the control measures would be adopted. Thus, the 43 specific firms operating 90 sources will annually incur an estimated $200,050 in aggregate annual costs as a result of 6-1-307.

Table 4 - Types of Industries Subject to Proposed Amendment 6-1-307 (Particulate Matters and Bulk Material Storage and Handling)

		Nos. Of Affected Firms	Controls\ Facilities	Annual Cost
Total		43	123	$200,050
Other Crushed & Broken Stone Mining & Quarrying	212319	1	1	$6,300
Construction sand and gravel mining	212321	2	5	$11,510
Comm. and Instit. Bldng Const. Contractors	236220	1	2	$3,270
Highway Street & Bridge Construction	237310	1	1	$135
Poured Concrete Foundation & Structure Contractors	238110	2	17	$29,480
All Other Specialty Trade Contractors	238990	1	1	$6,300
Other Animal Food Manufacturing	311119	3	11	$13,050
Oil refineries	324110	3	6	$11,235
Fertilizer (Mixing Only) Manufacturing	325314	1	1	$225
Other Concrete Product Manufacturing	327390	1	1	$225
Gypsum Product Manufacturing	327420	1	2	$3,270
Fabricated Pipe & Pipe Fitting Manufacturing	332996	1	1	$525
Brick, Stone/Related Constr Material Mrchnt Whlsrs	423320	5	27	$41,010
Recyclable Material Merchant Wholesalers	423930	3	5	$13,445
Other Miscellaneous Durable Goods Merchant Whlsrs	423990	1	11	$13,170
Other Chemical & Allied Products Merchant Whlsrs	424690	1	1	$525
Grain merchant wholesalers	424510	1	1	$270
Home Centers	444110	1	3	$3,540
Other Building Material Dealers	444190	5	11	$14,655
All Other Professional, Scientific/Technical Svcs	541990	2	6	$10,835
All Other Business Support Services	561499	1	2	$3,360
Solid Waste Collection	562111	2	3	$3,585
Other Waste Collection	562119	1	1	$225
Waste Mgmt. Landfill	562212	1	2	$3,405
Local government	999300	1	1	$6,500
Source: ADE, Inc., based on BAAQMD				

Many of the industries subject to proposed Section 6-1-307 are in construction and\or industries having to do with handling and moving materials in bulk (Table 5). In the Bay Area, affected industries declined by 21,200 jobs between 2006 and 2011, as the downturn affected the hardest real estate-related industries and sectors (including construction). However, between 2011 and 2016, these industries in the Bay Area had rebounded, having grown by 21,900 jobs over this five-year period.

Table 5 - Employment Trends for Type of Industries Subject to Proposed Amendment 6-1-307 (Particulate Matters Pertaining to Bulk Material Storage and Handling)

NAICS	Total Employment in Select Industries	2006	2011	2016	06-11 Chg	06-11 CAGR	11-16 Chg	11-16 CAGR
	Total	212,496	191,044	213,386	-21,219	-2%	21,953	2%
212319	Other crushed and broken stone mining and quarrying	47	54	na^	7	3%	---	---
212321	Construction sand, gravel mng.	na	157	na	---	---	---	---
236220	Commercial and institutional building construction	14,510	9,030	17,127	-5,480	-9%	8,097	14%
237310	Highway, street, bridge constr.	7,962	6,609	7,238	-1,353	-4%	629	2%
238110	Poured concrete foundation and structure contractors	5,505	3,376	6,376	-2,129	-9%	3,000	14%
212321	Construction sand, gravel mining	222	135	288	-87	-9%	153	16%
238990	All other specialty trade contr.	7,997	5,841	7,537	-2,156	-6%	1,696	5%
311119	Other animal food mfg.	63	na	na	---	---	---	---
324110	Petroleum refineries	6,197	6,935	4,068	738	2%	-2,867	-10%
325314	Fertilizer (mixing only) mfg.	na	na	na	---	---	---	---
327390	Other concrete product mfg.	644	130	61	-514	-27%	-69	-14%
327420	Gypsum product manufacturing	269	149	185	-120	-11%	36	4%
332996	Fabricated pipe, pipe fitting mfg.	6	na	35	---	---	---	---
423320	Brick, stone, and related construction mat. wholesalers	955	539	997	-416	-11%	458	13%
423390	Other constr. matl. wholesalers	47	67	277	20	7%	210	33%
424510	Grain merchant wholesalers	18	13	na	-5	-6%	---	---
424690	Oth. chemical, allied prod. whlsl	2,108	1,911	1,885	-197	-2%	-26	0%
444110	Home centers	13,665	12,110	13,279	-1,555	-2%	1,169	2%
444190	Other building material dealers	6,448	4,228	4,835	-2,220	-8%	607	3%
541190	All other legal services	2,075	1,014	1,940	-1,061	-13%	926	14%
561499	All other business support svc.	424	1,116	1,282	692	21%	166	3%
562111	Solid Waste Collection	2699	3085	3,789	692	21%	166	3%
562119	Other waste collection	15	na	40	---	---	---	---
562212	Waste Mgmt. Landfill	1,799	1,486	1,185	-313	-4%	-301	-4%
999300	Local government*	138,821	133,059	140,962	-5,762	-1%	7,903	1%

*Source: ADE, Inc., based on EDD LMID QCEW (http://www.labormarketinfo.edd.ca.gov/qcew/cew-select.asp): *Note: local government excludes local school districts and community colleges, as well as local government health services and districts. ^Notes: "na" employment figures due to EDD LMID data suppression for purposes of confidentiality.*

5. SOCIOECONOMIC IMPACT ANALYSIS OF PROPOSE NEW REG. 6 AND PROPOSED AMENDMENTS TO REG. 6, RULE 1

Because proposed new Reg. 6 ("Regulation 6: Common Definitions and Test Methods") is a foundational regulation that addresses definitions, monitoring requirements, and test methods, no new controls are required and no costs are incurred by affected industries. However, industries subject to proposed amendment 6-1-307 will incur costs. As indicated below, costs incurred by affected industries are less than significant across the board, with the overall cost-to-net profit ratio averaging approximately four percent (Table 6). Revenue, net profit, and cost-to-net profit ratios in the table below are presented in ranges in order to preserve the confidentiality affected sources' data, much of which was obtained for specific firms from InfoUSA. The cost-to-net profit ratio for 21 out of the 25 affected industries is less than 3.0 percent, while the remaining four industries exhibited cost-to-net profit ratios between 3 and 4 percent.

SMALL BUSINESS DISPROPORTIONATE IMPACT ANALYSIS

The State of California procures goods and services from a wide range of businesses, including small businesses. For purposes of certifying small business, the California Department of General Services defines a small business as a business that meets the following criteria[1]:

- Be independently owned and operated;
- Not dominant in field of operation;
- Principal office located in California;
- Owners (officers, if a corporation) domiciled in California; and,
- Including affiliates, be either,
    - A business with 100 or fewer employees; an average annual gross receipts of $15 million or less, over the last three tax years;
    - A manufacturer* with 100 or fewer employees; or,

[1]California

- A microbusiness. A small business will automatically be designated as a microbusiness, if gross annual receipts are less than $3,500,000; or the small business is a manufacturer with 25 or fewer employees.

Of the 43 specific firms that will be subject to the requirements of proposed section 6-1-307, 17 meet California's definition of small business. These 17 firms could incur as much as $55,075 in annual costs as a result of the proposed amendment. This annual cost amounts to 1.2 percent of estimated net profits generated by the affected small businesses. Thus, small businesses are not disproportionately impacted by the proposed section 6-1-307.

Table 6 - Socioeconomic Impact Analysis: Proposed Amendment 6-1-307

NAICS	Industry	Affected Sources	Control Facilties	Employ-ment	Revenues	Est. Net Profits	Annual Cost	Cost to net profits
	Total	43	123	4,273	$12,376,653,000	$490,249,600	$200,050	4.1%
212319	Other Crushed & Broken Stone Mining & Quarrying	1	1	15	$1.0M - $4.9M	$100.0K - $499.9K	$6,300	<10%
236220	Comm. and Instit. Bldng Const. Contractors	1	2	15	$5.0M - $9.9M	$100.0K - $499.9K	$3,270	<10%
237310	Highway Street & Bridge Construction	1	1	20	$10M - $24.9M	$500.0K - $999.9K	$135	<10%
238110	Poured Concrete Foundation & Structure Contractors	2	17	64	$10M - $24.9M	$500.0K - $999.9K	$29,480	<10%
212321	Construction sand and gravel mining	1	2	12	$25M - $49.9M	$1.0M - $2.49M	$7,025	<10%
238990	All Other Specialty Trade Contractors	1	1	38	$5.0M - $9.9M	$100.0K - $499.9K	$6,300	<10%
311119	Other Animal Food Manufacturing	3	11	284	$50.0M - $20.0B	$2.5M - $249.9M	$13,050	<10%
324110	Oil refineries	3	6	1,673	$50.0M - $20.0B	$250.0M - $500.0M	$11,235	<10%
424510	Grain merchant wholesalers	1	3	120	$25M - $49.9M	$500.0K - $999.9K	$4,485	<10%
325314	Fertilizer (Mixing Only) Manufacturing	1	1	24	$1.0M - $4.9M	$100.0K - $499.9K	$225	<10%
327390	Other Concrete Product Manufacturing	1	1	20	$1.0M - $4.9M	$100.0K - $499.9K	$225	<10%
327420	Gypsum Product Manufacturing	1	2	8	$1.0M - $4.9M	< $100.0K	$3,270	<10%
562111	Solid Waste Collection	1	2	200	$50.0M - $20.0B	$2.5M - $249.9M	$3,360	<10%
332996	Fabricated Pipe & Pipe Fitting Manufacturing	1	1	160	$25M - $49.9M	$1.0M - $2.49M	$525	<10%
423320	Brick, Stone/Related Constr Material Mrchnt Whlsrs	5	27	628	$50.0M - $20.0B	$2.5M - $249.9M	$41,010	<10%
423930	Recyclable Material Merchant Wholesalers	4	6	324	$50.0M - $20.0B	$2.5M - $249.9M	$13,670	<10%
423990	Other Miscellaneous Durable Goods Merchant Whlsrs	2	12	70	$25M - $49.9M	$1.0M - $2.49M	$13,440	<10%
424690	Other Chemical & Allied Products Merchant Whlsrs	1	1	20	$25M - $49.9M	$1.0M - $2.49M	$525	<10%
444110	Home Centers	1	3	32	$10M - $24.9M	$500.0K - $999.9K	$3,540	<10%

NAICS	Industry	Affected Sources	Control Facilties	Employ-ment	Revenues	Est. Net Profits	Annual Cost	Cost to net profits
444190	Other Building Material Dealers	5	11	110	$25M - $49.9M	$1.0M - $2.49M	$14,655	<10%
541990	All Other Professional, Scientific/Technical Svcs	2	6	33	$5.0M - $9.9M	$100.0K - $499.9K	$10,835	<10%
561499	All Other Business Support Services	1	2	14	$1.0M - $4.9M	$100.0K - $499.9K	$3,360	<10%
562119	Other Waste Collection	1	1	85	$10M - $24.9M	$500.0K - $999.9K	$225	<10%
562212	Waste Mgmt. Landfill	1	2	14	$1.0M - $4.9M	$100.0K - $499.9K	$3,405	<10%
999300	Local government	1	1	290	$50.0M - $20.0B	< $100.0K	$6,500	<10%

Source: ADE, Inc. based on BAAQMD (affected sources, facilities and controls), InfoUSA (company employment and revenues), US Economic Census 2012 (to estimate revenues in instances when information was not available from InfoUSA), and US IRS SOI (used to estimate industry after-tax net profits).

November 15, 2017

Socioeconomic Impact Analysis: New Regulation 6, Rule 6: Prohibition of Trackout

Prepared for:

Bay Area Air Quality Management District

Prepared by:

Applied Development Economics, Inc.
1756 Lacassie Avenue, #100, Walnut Creek, CA 94596 ■ 925.934.8712
www.adeusa.com

ADE - 30 YEARS OF SERVICE

APPLIED DEVELOPMENT ECONOMICS

BAY AREA GREEN BUSINESS

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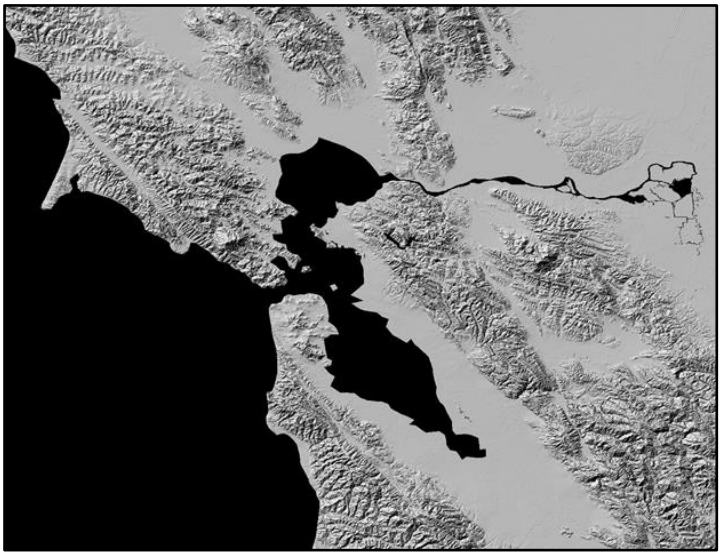
1. INTRODUCTION

The Bay Area Air Quality Management District (Air District) is proposing a new regulation to control particulate matter, called Regulation 6, Particulate Matter, Rule 6: Prohibition of Trackout (Rule 6-6). Rule 6-6 is part of a suite of proposals aimed at addressing fine particulate pollution. Small particles cause or contribute to a wide variety of serious health problems, including asthma, bronchitis, cardio-vascular diseases, and cancer. The Air District has committed to reducing particulate matter levels to achieve significant health benefits. The new rule will help reduce emissions of particulate matter in the Bay Area in a feasible and cost-effective manner, thereby improving public health and air quality throughout the region. This report analyzes the socioeconomic impacts associated with the proposed new regulation and amendments.

After this introduction, this report discusses the proposed revisions in greater detail (Section Two). After that discussion, the report describes the socioeconomic impact analysis methodology and data sources (Section Three). The report describes population and economic trends in the nine-county San Francisco Bay Area (Section Four), which serves as a backdrop against which the Air District is contemplating its various rule changes. Finally, the socioeconomic impacts stemming from the proposed rule changes are discussed in Section Five. The report is prepared pursuant to Section 40728.5 of the California Health and Safety Code, which requires an assessment of socioeconomic impacts of proposed air quality rules. The findings in this report can assist Air District staff in understanding the socioeconomic impacts of the proposed requirements, and can assist staff in preparing a refined version of the rule. Figure 1 is a map of the nine-county region that comprises the San Francisco Bay Area Air Basin.

Figure 1 – Map of San Francisco Bay Area Region



2. OVERVIEW OF NEW REGULATION 6-6: PROHIBTION OF TRACKOUT

The proposed new Rule 6-6 focuses on road dust, which is a large source of fine particulates. Road dust is composed of small particles from erosion of the road's surface and fine particles from vehicles driving over and pulverizing any solid materials that may have been deposited on the road. Tire wear and brake pad wear are also sources of particulates found near roadways. Proposed new Rule 6-6 addresses mud and dirt that can be "tracked out" onto a paved road from a construction site, quarry, landfill or other disturbed surface. This material – referred to as "trackout" – contributes to particulate pollution because vehicle traffic on the paved road will pulverize the mud and dirt into smaller particles (known as silt), and turbulence from the vehicles entrain the silt into the air. Proposed new Rule 6-6 addresses this problem by prohibiting trackout of mud and dirt onto paved roadways. Prohibition of trackout is intended to control particulate matter with an aerodynamic diameter of 2.5 micron or less ($PM_{2.5}$), particularly around areas that can impact nearby young and elderly people, or people with breathing issues.

The principal requirements in the proposed new Rule 6-6 are that the owner/operator of a bulk material site greater than one acre, construction site greater than one acre, or disturbed surface site greater than one acre cannot allow solids from the site to be "tracked out" or deposited on the adjacent paved public road. A small amount of trackout is tolerable, but if the dirt or solids track out onto the road for more than cumulative 25 linear feet, or 25 square feet, the solids on the road must be cleaned up. At the end of the workday, no more solids than would fill a quart container are allowable. Any cleanup can likely be done by using a shovel or hand sweeping with a dust pan, but precautions must be taken to control fugitive dust during the cleanup process.

COST OF COMPLIANCE

Total costs for implementation of proposed new Rule 6-6 are estimated to be $2,500,000 in capital costs, and $1,160,000 in annual operating costs. Air District staff envisions affected sources and industries will implement Rule 6-6 in one of three ways, which are described below:

GRIZZLY BARS OR RUMBLE GATES

Trackout at large sites can be prevented by using "grizzly" bars or a "rumble grate" system. A grizzly system can be installed for approximately $10,000, with monthly cleaning required to provide an open catch basin below the grizzly for mud and dirt to fall into and away from the vehicle tires. Most large sites already have a grizzly system or a truck wash station. Annual costs of operating a grizzly system are estimated to be $3,000 per year. The Air District estimates that 100 facilities in the Bay Area require grizzly bar systems, resulting in a total capital cost of $1 million (annualized at $200,000 a year), on top of which would be added $100,000 in total annual operating costs. Thus, total annual costs amount to $300,000 a year.

Truck Wash Stations

Truck wash stations are very effective at preventing trackout, and typically cost on a per unit basis anywhere from $100,000 to $150,000, amortized to $30,000 per year in capital costs. Water, power, maintenance, and mud cleanout and disposal increase the total costs to about $56,000 per year. These facilities need to have the mud removed weekly, typically removing 800 – 1,000 lbs. of solids. A large facility may need two truck wash stations if they have high vehicle traffic. Staff estimates that few, if any, large sites will need to install a truck wash system. However, assuming that ten sites determine it is more cost effective to use a truck wash rather than a grizzly system, the costs could be $1,500,000 in capital expenditures, with annual costs totaling $560,000 or approximately $56,000 in annual costs each.

Hand-sweeping trackout

One option for removing excessive trackout and cleanup of all trackout at the end of each workday is to use a street sweeper. Conventional street sweepers are estimated to cost $250,000, although they do a very poor job of capturing and controlling visible road dust and will probably not prevent dust plumes when sweeping. Regenerative PM_{10} efficient street sweepers are estimated to cost $450,000. A simpler option is to send a worker to scoop up or sweep up any excessive trackout, and sweep up the area at the end of the workday. Estimated cost for cleanup of 50 square feet of excessive trackout or spills is $75 (one worker for one hour, plus hand tools) each workday, totaling $15,000 per year (typically 200 dry workdays each year). Staff estimates large facilities with effective truck wash systems will not have to do any cleanup. Staff estimates that 200 facilities with effective grizzly systems will have to do minor cleanup at the end of each dry workday, with total incremental costs for these facilities equal to 10 percent X $3,000,000 = $300,000 in annual costs, or $1,500 per year at each facility. Below is a summary of costs associated with proposed new Rule 6-6 (Table 1).

Table 1- Capital and Operating Costs: Proposed New Rule 6-6: Prohibition of Trackout

Controls	Unit Costs		Sites	Aggregate Costs			
Track-Out Prevention	(A1) Unit Cost: Capital	(B1) Unit Cost: Annual Operations	(C1) Number of Sites	(D1) Total Aggregate Capital Cost [A1 x C1]	(E1) Aggregate Annual Capital Cost	(F1) Aggregate Annual Operating Cost [B1 x C1]	(G1) Total Annual Cost [E1 + F1]
Grizzly system	$10,000	$3,000	100	$1,000,000	*$200,000*	*$100,000*	$300,000
Truck wash station	$150,000	$26,000	10	$1,500,000	*$300,000*	*$260,000*	$560,000
Trackout Clean-Up	(A2) Unit Cost: Capital	(B2) Unit Cost: Annual Operations	(C2) Number of Sites	(D2) Total Aggregate Capital Cost [A2 x C2]	(E2) Aggregate Annual Capital Cost	(F2) Aggregate Annual Operating Cost [B2 x C2]	(G2) Total Annual Cost [E2 + F2]
Sweeping	-- na	$15,000	200	-- na	*-- na*	*$300,000*	$300,000
Summary of Costs (Track-Out Prevention and Cleanup Combined)				Total Aggregate Capital Cost (Grizzlies, TWS, and Sweeping) [D1 + D2]	Aggregate Annual Capital Cost (Grizzlies, TWS, and Sweeping) [E1 + E2]	Aggregate Annual Operating Costs (Grizzlies, TWS, and Sweeping) [F1 + F2]	Total Aggregate Annual Costs (Grizzlies, TWS, and Sweeping) [G1 + G2]
				$2,500,000	*$500,000*	*$660,000*	$1,160,000

3. METHODOLOGY

Applied Development Economics (ADE) typically begins its impact analysis by preparing a statistical description of the industries affected by proposed rules and amendments, analyzing data on the number of establishments, jobs, and payroll. We also estimated sales generated by impacted industries. To generate its estimates, ADE relies on the most current data available from a variety of sources, particularly the State of California's Employment Development Department (EDD) Labor Market Information Division, the US Census County Business Patterns, and the US Internal Revenue Service. When presented with a list of specific firms affected by proposed new regulations, ADE also analyzes firm-specific data from private data vendors, such as InfoUSA.

When compliance cost information is readily available, ADE then compares costs against net profits, in the case of private sector entities affected by proposed rules, with the results of socioeconomic analysis show what proportion of profits the compliance costs represent. Based on assumed thresholds of significance, ADE discusses in the report whether the affected sources are likely to reduce jobs as a means of recouping the cost of rule compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the jobs losses are estimated using a regional IMPLAN input-output model. In the case of impacts borne by public sector entities, ADE analyzes whether affected sources can cover costs a combination of sources' annual revenues and fund balance reserves.

When analyzing the socioeconomic impacts of proposed new rules and amendments, ADE attempts to work closely within the parameters of accepted methodologies discussed in a 1995 California Air Resources Board (ARB) report called "Development of a Methodology to Assess the Economic Impact Required by SB513/AB969" (by Peter Berck, PhD, UC Berkeley Department of Agricultural and Resources Economics, Contract No. 93-314, August, 1995). The author of this report reviewed a methodology to assess the impact that California Environmental Protection Agency proposed regulations would have on the ability of California businesses to compete. The ARB has incorporated the methodologies described in this report in its own assessment of socioeconomic impacts of rules generated by the ARB. One methodology relates to determining a level above or below which a rule and its associated costs is deemed to have significant impacts. When analyzing the degree to which its rules are significant or insignificant, the ARB employs a threshold of significance that ADE follows. Berck reviewed the threshold in his analysis and wrote, "The Air Resources Board's (ARB) use of a 10 percent change in [Return on Equity] ROE (i.e. a change in ROE from 10 percent to a ROE of 9 percent) as a threshold for a finding of no significant, adverse impact on either competitiveness or jobs seems reasonable or even conservative."

4. ECONOMIC AND DEMOGRAPHIC TRENDS

This section of the report discusses the larger context within which the Air District is contemplating proposed New Regulation 6-6 (Prohibition of Trackout). This section begins with a broad overview of demographic and economic trends, with discussion then narrowing to industries and sources affected by the proposed rule changes.

REGIONAL POPULATION TRENDS

Table 2 tracks population growth in the nine-county San Francisco Bay Area between 2007 and 2017, including data for the year 2012. Between 2007 and 2017, the region grew by approximately 0.5 percent a year. Between 2012 and 2017, the region grew annually at a somewhat faster rate of 0.9 percent per year. Overall, there are 7,714,638 people in the region. At 1,938,180, Santa Clara County has the most people, while Napa has the least, at 142,408. Alameda and Contra Costa Counties grew the fastest between 2012 and 2017, at 1.3 percent a year, while Marin and Napa grew by the slowest rate (0.6 percent a year) over the same period.

Table 2: Population Trends: Bay Area Counties, Region, and California

JURISDICTION	2007	2012	2017	07-12 CAGR	12-17 CAGR	07-17 CAGR
California	37,463,609	37,881,357	39,523,613	0.2%	0.9%	0.5%
SF Bay Area	7,122,615	7,300,094	7,714,638	0.5%	1.1%	0.8%
Alameda	1,519,250	1,543,027	1,645,359	0.3%	1.3%	0.8%
Contra Costa	1,035,097	1,069,977	1,139,513	0.7%	1.3%	1.0%
Marin	254,532	255,812	263,604	0.1%	0.6%	0.4%
Napa	134,726	138,074	142,408	0.5%	0.6%	0.6%
San Francisco	823,940	826,103	874,228	0.1%	1.1%	0.6%
San Mateo	727,719	735,256	770,203	0.2%	0.9%	0.6%
Santa Clara	1,797,623	1,828,496	1,938,180	0.3%	1.2%	0.8%
Solano	422,646	415,862	436,023	-0.3%	1.0%	0.3%
Sonoma	478,935	487,487	505,120	0.4%	0.7%	0.5%

Source: ADE, Inc., based on California Dept. of Finance E-5 Reports (note: CAGR = compound annual growth rate)

REGIONAL ECONOMIC TRENDS

Data in Table 3 describe the larger economic context within which officials are contemplating the proposed New Regulation 6-6. Businesses in the region employ over three and a half million workers, or 3,611,076. Of the 3,611,076 workers, 157,408 or 4.4 percent, are civil servants in the public sector (109,269 are local government employees and 48,140 are state and federal workers). This figure does not include public sector education employees, who were combined with private sector education employees in an effort to present a picture as to the total number of persons in the education in the Bay Area. There are 145,498 employees in "Education: elementary and secondary", and another

77,514 in "Education: post-secondary", for a total of 223,012 (or 6.2 percent). For the same reason, we combined public sector workers in health care with private sector workers in health.

Table 3 — San Francisco Bay Area Employment Trends By Sector: 2006 - 2016

Industry Sector		2006	2011	2016	2016	2016 CA	SFBA CAGR* 06-11	SFBA CAGR 11-16	CA CAGR 11-16
Total		3,150,735	3,040,409	3,672,206	100.00%	100%	-0.7%	3.8%	2.7%
11	Agriculture	20,450	19,231	20,317	0.6%	2.5%	-1.2%	1.1%	1.6%
21	Mining	2,047	1,977	1,638	0.0%	0.1%	-0.7%	-3.7%	-2.8%
22	Utilities	15,689	18,940	18,705	0.5%	0.6%	3.8%	-0.2%	0.3%
23	Construction	192,897	130,376	184,119	5.0%	4.6%	-7.5%	7.1%	6.5%
31-33	Manufacturing	352,040	311,361	335,243	9.1%	7.8%	-2.4%	1.5%	0.9%
42	Wholesale	125,200	113,953	128,274	3.5%	4.3%	-1.9%	2.4%	1.8%
44-45	Retail	336,232	311,906	343,504	9.4%	10.0%	-1.5%	1.9%	1.7%
48-49	Transportation and	85,970	76,695	89,958	2.4%	3.0%	-2.3%	3.2%	4.7%
51	Information	112,820	116,668	172,891	4.7%	3.1%	0.7%	8.2%	3.8%
52	Finance and Insurance	151,360	118,888	129,338	3.5%	3.2%	-4.7%	1.7%	0.9%
53	Real Estate	62,020	52,139	58,855	1.6%	1.7%	-3.4%	2.5%	2.2%
54	Prof., Scientific, Tech.	312,042	339,865	436,816	11.9%	7.3%	1.7%	5.1%	2.8%
55	Mgt. of Companies	56,807	60,196	72,498	2.0%	1.4%	1.2%	3.8%	2.8%
561	Admin. Support	175,238	158,050	200,162	5.5%	6.2%	-2.0%	4.8%	4.4%
562	Waste Management	10,482	11,105	12,499	0.3%	0.3%	1.2%	2.4%	3.0%
6111	Education - elem., sec.	123,430	120,714	145,498	4.0%	5.3%	-0.4%	3.8%	1.6%
6112-6117	Education - post-sec.	68,644	69,239	77,514	2.1%	3.1%	0.2%	2.3%	1.0%
62	Health	345,833	384,305	469,975	12.8%	14.1%	2.1%	4.1%	3.8%
71	Arts, Entert., Recreation	50,976	52,549	61,090	1.7%	1.8%	0.6%	3.1%	3.7%
721	Accommodations	222,418	236,326	300,218	8.2%	1.3%	-0.4%	1.9%	2.2%
722	Food, drinking	47,380	46,522	51,100	1.4%	8.1%	1.2%	4.9%	4.6%
81	Other service***	105,108	105,729	123,827	3.4%	3.1%	0.1%	3.2%	2.9%
92	Public: Local Govt.**	116,196	105,061	109,269	3.0%	3.9%	-2.0%	0.8%	0.5%
92	Public: State and Federal**	59,325	66,047	48,140	3.0%	2.5%	2.2%	-6.1%	-0.7%
99	Unclassified	131	12,567	19,630	0.5%	0.6%	149.1%	9.3%	7.4%

*Source: Applied Development Economics, Inc. based on California EDD LMID QCEW (http://www.labormarketinfo.edd.ca.gov/qcew/cew-select.asp). *Note: CAGR = compound annual growth rate. **Note: EDD LMID public education (elementary, secondary, and post-secondary), public health, and public utilities employment data moved out of local, state and federal public administration categories and into their corresponding private categories above, in an effort to accurately profile employment trends by sector. ***Note: in 2013, the US BLS moved a large portion of NAICS 814110 (private households) to NAICS 624120 (Support to elderly persons and persons with disabilities): the totals above account for that adjustment for 2006 and 2011.*

The top five sectors in the Bay Area in terms of total number of workers are Health and Social Assistance (NAICS 62) (469,75 workers), Professional/Technical Services (NAICS 54) (436,816 workers), Retail (NAICS 44-45) (343,504), Manufacturing (NAICS 31-33) (335,243) and Food Services (300,218). Of the top-ten leading sectors in terms of employment, six exhibited high rates of annual growth from 2010 to 2015, growing annually by more than four percent. These sectors are Health and Social Assistance (4.1 percent per year), Professional/Technical Services (5.1 percent), Food Services (4.9 percent), Administrative Support (NAICS 561) (4.8 percent), Construction (NAICS 23) (7.1 percent per year) and Information (NAICS 51), which grew at a phenomenal annual rate of 8.2 percent. Combined, these five sectors employ 49 percent of total employment, or 1,764,180 out of

3,611,076. The table also demonstrates the advanced nature of the regional economy, as 12.1 percent of all workers are in the Professional, Scientific and Technical (NAICS 54), whereas in the state as a whole, 7.3 percent of all workers are in this sector. Interestingly, at 1.5 percent per year, manufacturing employment growth in the Bay Area almost doubled statewide manufacturing growth rates (0.9 percent), underscoring the diversity of the regional economy.

TYPES OF INDUSTRIES SUBJECT TO PROPOSED NEW RULE 6-6

If adopted, Air District Compliance & Enforcement inspectors will need to monitor approximately 150 – 250 large bulk material sites, large construction sites, and large disturbed surface sites for trackout, and will need to respond to citizen complaints of localized fugitive dust from trackout. Construction sites are defined as any location where buildings, structures or improvements are being constructed, maintained, altered, remodeled, expanded or demolished. These sites include all contiguous and adjacent areas where related activities can take place. A disturbed surface site is any land that has been physically moved, uncovered, destabilized, or otherwise modified from its natural conditions, making the surface subject to wind erosion, vehicle traffic or mechanical activities that generate fugitive dust. Large bulk material sites, large construction sites, and large disturbed surface sites are sites where the total area of the site is greater than 1 acre.

Types of industries that reflect areas covered by proposed Rule 6-6 are listed below (Table 4). The list of industries reflects the firms that are subject to and have been part of the process involving other Regulation 6 measures, particularly proposed Rule 6-1, Section 6-1-307. That list was further reduced to the fifteen industries below, to focus only on industries having to do with construction, bulk materials storage and handling, and large surface sites such as solid waste collection facilities. According to County Business Patterns, there are 3,588 establishments operating in the Bay Area in the type of industries that will be subject to Rule 6-6, if adopted. These industries annually generate approximately $37.8 billion in revenues, and employ an estimated 77,018 workers.

Table 4 - Industries Subject to Proposed New Rule 6-6 (Trackout Prohibition): SF Bay Area

Industries	NAICS	Establish ments	Employ- ment	Aggregate Revenue
Total		3,588	77,018	$37,769,778,401
Other Crushed & Broken Stone Mining & Quarrying	212319	9	211	$36,581,189
Construction sand and gravel mining	212321	11	360	$57,453,108
Comm. and Instit. Bldng Const. Contractors	236220	820	17,841	$15,107,436,446
Highway Street & Bridge Construction	237310	164	6,808	$3,362,056,766
Poured Concrete Foundation & Structure Contractors	238110	315	7,146	$1,504,378,858
All Other Specialty Trade Contractors	238990	540	7,248	$1,656,945,175
Brick, Stone/Related Constr Material Mrchnt Whlsrs	423320	51	391	$296,374,897
Other Construction Materials Wholesalers	423390	58	610	$240,088,744
Recyclable Material Merchant Wholesalers	423930	159	2,846	$2,421,908,611
Other Miscellaneous Durable Goods Merchant Whlsrs	423990	240	2,226	$4,519,337,218
Home Centers	444110	91	12,203	$4,686,095,390
Other Building Material Dealers	444190	724	7,553	$1,603,375,371
Solid Waste Collection	562111	166	7,456	$1,189,865,303
Other Waste Collection	562119	16	291	$51,561,117
Waste Mgmt. Landfill	562212	23	613	$128,942,960

Source: ADE, Inc, based on US Census County Business Patterns 2015, US Economic Census, and Statistics of US Businesses

Many of the industries subject to proposed Rule 6-6 are in construction and\or industries having to do with handling and moving materials in bulk (Table 5). In the Bay Area, affected industries declined by almost 15,000 jobs between 2006 and 2011, as the downturn affected the hardest real estate-related industries and sectors (including construction). However, between 2011 and 2016, these industries in the Bay Area had rebounded, having grown by 15,500 jobs over this five-year period. It is important to note that employment figures in Table 5 below differ from Table 4 above largely because below is based on California EDD, which masks many counties' industry data for confidentiality.[1] The table below is presented in an effort to show trends over the last ten years, particularly the effect the Great Recession had on industries potentially subject to Rule 6-6.

Table 5 - Employment Trends for Type of Industries Subject to Proposed New Rule 6-6 (Trackout Prohibition): San Francisco Bay Area

NAICS	Total Employment in Select Industries	2006	2011	2016	06-11 Chg	06-11 CAGR	11-16 Chg	11-16 CAGR
	Total	67,487	52,524	68,004	-14,963	-4.9%	15,480	5.3%
212319	Other crushed and broken stone mining	47	54	na^	7	3%	---	---
212321	Construction sand, gravel mng.	na	157	na	---	---	---	---
236220	Commercial and institutional bldg. const.	14,510	9,030	17,127	-5,480	-9%	8,097	14%
237310	Highway, street, bridge constr.	7,962	6,609	7,238	-1,353	-4%	629	2%
238110	Poured concrete fndtn and structure cont.	5,505	3,376	6,376	-2,129	-9%	3,000	14%
212321	Construction sand, gravel mining	222	135	288	-87	-9%	153	16%
238990	All other specialty trade contr.	7,997	5,841	7,537	-2,156	-6%	1,696	5%
423320	Brick, stone, and related construction mat. Wholesalers	955	539	997	-416	-11%	458	13%
423930	Recyclable Material Merchant Wholesalers	2,076	2,600	2,185	524	4.6%	-415	-3.4%
423990	Other Misc. Dur. Goods Merchant Whlsrs	1,479	1,363	1,243	-116	-1.6%	-120	-1.8%
424690	Oth. chemical, allied prod. Whlsrs	2,108	1,911	1,885	-197	-2%	-26	0%
444110	Home centers	13,665	12,110	13,279	-1,555	-2%	1,169	2%
444190	Other building material dealers	6,448	4,228	4,835	-2,220	-8%	607	3%
562111	Solid Waste Collection	2699	3085	3,789	692	21%	166	3%
562119	Other waste collection	15	na	40	---	---	---	---
562212	Waste Mgmt. Landfill	1,799	1,486	1,185	-313	-4%	-301	-4%

*Source: ADE, Inc., based on EDD LMID QCEW (http://www.labormarketinfo.edd.ca.gov/qcew/cew-select.asp): *Note: local government excludes local school districts and community colleges, as well as local government health services and districts. ^Notes: "na" employment figures due to EDD LMID data suppression for purposes of confidentiality.*

[1]While the EDD and CBP-based employment estimates vary, employment data on an industry-by-industry basis are distributed in a somewhat similar manner: according to EDD, there are 17,127 workers in commercial and institutional building construction (NAICS 236220), whereas the estimate based on County Business Patterns places employment in the same industry at 17,841. Poured concrete foundation (NAICS 238110) is 6,376 according to EDD, whereas according to estimates based on CBP it is 7,146. But this is not the case for all industries. For example, EDD reports 3,789 workers in solid waste collection (NAICS 562111), while based on the way establishments are distributed by size of workforce in the CBP data set, there are 7,456 workers in this industry per CBP.

5. SOCIOECONOMIC IMPACT ANALYSIS OF PROPOSED NEW RULE 6-6 (PROHIBITION OF TRACKOUT)

With respect to analyzing socioeconomic impacts of proposed new rules and amendments to existing rules, the District identifies a set of economic sectors and industries that would be impacted by implementation of proposed new regulations. All firms and establishments within affected industries could be subject to proposed regulation, or a sub-set might be affected in so far as they exceed certain thresholds or triggers identified in proposed regulations. In the case of proposed Rule 6-6, the District indicated that not all establishments within affected industries would implement control measures contemplated in Rule 6-6. Thus, staff estimates that 100 facilities in the Bay Area will adopt grizzly systems to mitigate trackout, whereas 10 facilities will implement truck wash stations. An estimated 200 facilities will implement hand-sweeping mitigations to deal with trackout. Staff also identified types and characteristics of establishments in industries potentially affected by the proposed rule, i.e. large construction sites, large bulk materials sites, and large disturbed surface areas that generate trackout. Staff further indicated that more than likely establishments in the bottom-half of affected industries would adopt hand-sweeping as their respective trackout mitigation, and the type of establishment that would adopt a truck wash station would be those that perform anywhere in the 75th to 90th percentile range of their respective industries.

SOCIOECONOMIC IMPACT ANALYSIS: GRIZZLY SYSTEMS

Since the types of facilities that would adopt control associated with proposed Rule 6-6 are operators of large sites, we assume that the 100 facilities that would adopt grizzly system would be in the top 25th percentile in terms of performance.[2] The original list of 15 industries consisting of 3,387 establishments (Table 4) was narrowed to the nine industries below by first focusing on the top 25th percentile performers within each of the 15 industries; of the 3,387 establishments, 232 are in the highest 25th percentile. We then ordered the list of industries based on average annual revenue characteristics. We then pro-rated the total number of establishments in each affected industry to

[2] Using County Business Patterns, we arranged Bay Area establishments in affected industries by their respective employment size categories (1-4 workers, 5-9 workers, 10-19 workers, 20-49 workers, 50-99, etc.), on the assumption that performance correlates with employment size category. In this manner, we were able to identify the number of establishments in the top 25th percentile (i.e. 75th percentile-to-100th percentile performers), as well as those in the first fiftieth percentile. In addition to estimating employment generated by establishments in various performance tiers, we also estimated revenues in a manner that accounted for productivity based on employment size of establishments. To this end, we used data from the US Economic Census and US Census Statistics of United States Business (SUSB). SUSB data shows that within the same industries, establishments that are in a higher employment size category generate higher revenues-per-worker ratios than establishments in smaller employment size categories.

"100", as the Air District estimates that 100 facilities would adopt grizzly systems. The original list of 15 industries fell to nine due to pro-rating of the number of establishments. As indicated below, the impacts stemming from the grizzly system are less than significant.

Table 6- Socioeconomic Impact Analysis: Rule 606: Trackout Prohibition: Grizzly System

NAICS	Industries	Establishments (Est. Number That Will Adopt Grizzly System Control)	Est. Aggregate Annual Revenues Of Control-Adopting Establishments	Est. Aggregate Annual Net Profits of Control-Adopting Establishments	Est. Aggregate Cost of Control-Adopting Establishments	Cost to Net Profits
Total		100	$2,016,276,123	$80,410,177	$300,000	0.4%
212321	Construction sand and gravel mining	2	$34,882,545	$1,720,061	$6,000	0.3%
236220	Comm. and Instit. Bldng Const. Contractors	48	$977,353,019	$37,942,626	$144,000	0.4%
237310	Highway Street & Bridge Construction	10	$259,408,359	$14,226,564	$30,000	0.2%
423320	Brick, Stone/Related Constr Material Mrchnt Whlsrs	5	$53,570,812	$1,515,647	$15,000	1.0%
423930	Recyclable Material Merchant Wholesalers	10	$234,553,093	$10,353,632	$30,000	0.3%
423990	Other Miscellaneous Durable Goods Merchant Whlsrs	15	$346,982,710	$9,816,975	$45,000	0.5%
562111	Recyclable Material Merchant Wholesalers	5	$65,871,688	$2,907,705	$15,000	0.5%
562119	Other Waste Collection	2	$15,942,438	$703,730	$6,000	0.9%
562212	Solid Waste Landfill	3	$27,711,460	$1,223,238	$9,000	0.7%

SOCIOECONOMIC IMPACT ANALYSIS: TRUCK WASH STATION

With respect to the portion of the proposed Rule 6-6 having to do with truck wash stations as possibly trackout mitigation, Air District staff indicates that the highest performing firms operating in the Bay Area already have this control in place. Staff believes that establishment needing to adopt a truck wash station would be performing at the 75th percentile-to-90th percentile range. The ten 75th-to-90th percentile performing establishments that would adopt a truck wash system would come from the four industries identified below, the list of which was arrived at in the same way we described above for the grizzly system. Impacts are less than significant.

Table 7- Socioeconomic Impact Analysis: Rule 606: Trackout Prohibition: Truck Wash Station

NAICS	Industries	Establishments (Est. Number That Will Adopt Truck Wash Station Control)	Est. Aggregate Annual Revenues Of Control-Adopting Establishments	Est. Aggregate Annual Net Profits of Control-Adopting Establishments	Est. Aggregate Cost of Control-Adopting Establishments	Cost to Net Profits
		10	$209,368,066	$8,851,350	$560,000	6.3%
212321	Construction sand and gravel mining	1	$17,441,273	$860,030	$56,000	6.5%
236220	Comm. and Instit. Bldng Const. Contractors	7	$142,530,649	$5,533,300	$392,000	7.1%
237310	Highway Street & Bridge Construction	1	$25,940,836	$1,422,656	$56,000	3.9%
423930	Recyclable Material Merchant Wholesalers	1	$23,455,309	$1,035,363	$56,000	5.4%

It is important to note that some industries will have establishments that bear the cost of both a new grizzly system and a truck wash system. Thus, we analyzed the cumulative effect of adopting both controls, for those industries at-risk of doing so. Impacts are still less than significant.

Table 8- Socioeconomic Impact Analysis: Rule 606: Trackout Prohibition: Grizzly System and Truck Wash Station

NAICS	Industries	Establishments (Est. Number That Will Adopt Both Grizzly System and Truck Wash Station Control)	Est. Aggregate Annual Revenues Of Control-Adopting Establishments	Est. Aggregate Annual Net Profits of Control-Adopting Establishments	Est. Aggregate Cost of Control-Adopting Establishments	Cost to Net Profits
		42	$904,302,259	$38,531,817	$686,000	1.8%
212321	Construction sand and gravel mining	1	$17,441,273	$860,030	$59,000	6.9%
236220	Comm. and Instit. Bldng Const. Contractors	29	$590,484,115	$22,923,670	$479,000	2.1%
237310	Highway Street & Bridge Construction	6	$155,645,016	$8,535,938	$74,000	0.9%
423930	Recyclable Material Merchant Wholesalers	6	$140,731,856	$6,212,179	$74,000	1.2%

SOCIOECONOMIC IMPACT ANALYSIS: SWEEPING

According to the Air District, the type of establishment that would adopt hand-sweeping as a Rule 6-6 mitigation would come from the first 50th percentile set of establishments, although staff estimates that only 200 facilities will adopt this approach. For purposes of the analysis, we assume the 200 establishments would come from all of the 15 affected industries. Of the 3,588 establishments in the 15 affected industries, an estimated 1,800 are in the first 50th percentile, an amount that is then pro-rated to 200, to reflect the fact that 200 facilities will adopt sweeping as their respective Rule 6-6 control. As indicated below, impacts are less than significant, although poured concrete foundation

(NAICS 238110), and other building materials dealers (NAICS 444190) cost-to-net profit ratios are close to 10 percent.

Table 9- Socioeconomic Impact Analysis: Rule 606: Trackout Prohibition: Grizzly System and Truck Wash Station

NAICS	Industries	Establishments (Est. Number That Will Adopt Hand-Sweep Control)	Est. Aggregate Annual Revenues Of Control-Adopting Establishments	Est. Aggregate Annual Net Profits of Control-Adopting Establishments	Est. Aggregate Cost of Control-Adopting Establishments	Cost to Net Profits
		200	$603,039,072	$26,285,674	$300,000	1.1%
212319	Other Crushed & Broken Stone Mining & Quarrying	1	$5,225,884	$257,689	$1,500	0.6%
212321	Construction sand and gravel mining	1	$1,143,575	$56,390	$1,500	2.7%
236220	Comm. and Instit. Bldng Const. Contractors	52	$47,156,870	$1,830,716	$78,000	4.3%
237310	Highway Street & Bridge Construction	10	$13,859,169	$760,069	$15,000	2.0%
238110	Poured Concrete Foundation & Structure Contractors	17	$5,261,306	$288,542	$25,500	8.8%
238990	All Other Specialty Trade Contractors	27	$9,546,635	$463,130	$40,500	8.7%
423320	Brick, Stone/Related Constr Material Mrchnt Whlsrs	3	$5,501,779	$155,659	$4,500	2.9%
423390	Other construction Matl. Whls.	4	$7,052,448	$311,309	$6,000	1.9%
423930	Recyclable Material Merchant Wholesalers	9	$11,116,638	$490,710	$13,500	2.8%
423990	Other Miscellaneous Durable Goods Merchant Whlsrs	12	$44,049,559	$1,246,268	$18,000	1.4%
444110	Home Centers	6	$417,503,538	$18,837,347	$9,000	0.0%
444190	Other Building Material Dealers	46	$15,797,569	$712,771	$69,000	9.7%
562111	Solid Waste Collection	9	$7,204,934	$318,040	$13,500	4.2%
562119	Other Waste Collection	1	$489,770	$21,619	$1,500	6.9%
562212	Solid Waste Landfill	2	$12,129,397	$535,415	$3,000	0.6%

SMALL BUSINESS DISPROPORTIONATE IMPACT ANALYSIS

The State of California procures goods and services from a wide range of businesses, including small businesses. For purposes of certifying small business, the California Department of General Services defines a small business as a business that meets the following criteria:

- Be independently owned and operated;
- Not dominant in field of operation;
- Principal office located in California;

- Owners (officers, if a corporation) domiciled in California; and,
- Including affiliates, be either,
    - A business with 100 or fewer employees; average annual gross receipts of $15 million or less, over the last three tax years;
    - A manufacturer* with 100 or fewer employees; or,
    - A microbusiness. A small business will automatically be designated as a microbusiness, if gross annual receipts are less than $3,500,000; or the small business is a manufacturer with 25 or fewer employees.

Of the 100 establishments that will adopt a grizzly system, fifteen in four industries (brick, stone construction materials [NAICS 423320], recyclable material merchant wholesaler [NAICS 562111], other waste collection [NAICS 562119] and solid waste land fill [NAICS 562212])) meet the gross receipt criterion of small business. Assuming these establishments fulfill the other criteria and are indeed small businesses, each of these establishments are not significantly impacted. Moreover, their combined cost of $45,000 out of a total of $300,000 in cost suggests small businesses are not disproportionately impacted when it comes to the grizzly system. None of the establishments that would adopt truck wash system are small businesses, as their respective annual receipts average higher than $15 million. Except for home centers (NAICS 444110), all of the establishments that would adopt sweeping as their Rule 6-6 trackout mitigation are small businesses, although none are significantly impacted by the proposed new rule. Thus, proposed new Rule 6-6 does not disproportionately impact small businesses.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

California Environmental Quality Act

NOTICE OF INTENT TO ADOPT NEGATIVE DECLARATION

LEAD AGENCY: Bay Area Air Quality Management District
Contact: Guy A. Gimlen Phone: 415-749-4734

SUBJECT: NOTICE OF INTENT TO ADOPT NEGATIVE DECLARATION PURSUANT TO SECTION 21092 AND 21092.3 OF THE PUBLIC RESOURCES CODE AND CEQA GUIDELINES SECTION 15072

Project Title: Proposed New Regulation 6: Particulate Matter—Common Definitions and Test Methods; Proposed Amendments to Regulation 6, Rule 1: General Requirements; and Proposed New Regulation 6, Rule 6: Prohibition of Trackout

Project Location: The rule and proposed amendments apply within the Bay Area Air Quality Management District ("Air District") jurisdiction, which includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, and the southern portions of Solano and Sonoma counties.

Project Description: The Air District has regulatory authority over stationary sources of air pollution in the San Francisco Bay Area. New Regulation 6 is proposed to provide common definitions and test methods that apply to existing Regulation 6 rules and any other source-specific rules as they are developed in the future. A Staff Report provides background information on new Regulation 6 and a summary of the rationale for updating Regulation 6, Rule 1 (Rule 6-1). Background research on Bay Area particulate matter emissions is provided in Attachment 1 of the report. A second Staff Report has been developed to provide the specific information supporting the draft amendments to Rule 6-1. The two proposed rules and two staff reports are intended to provide the public with information on both the new Regulation 6 and draft amendments to Rule 6-1 in advance of Public Hearing. Requirements for bulk material storage and handling facilities have been included in amendments to Rule 6-1.

A new Regulation 6, Rule 6: Prohibition of Trackout (Rule 6-6) is being proposed to prohibit trackout of dirt and other solids onto adjacent public roadways. A third Staff Report has been developed for proposed new Rule 6-6 to provide supporting information. The proposed rule and staff report are intended to provide the public with information in advance of a Public Hearing. Proposed new Rule 6-6 will be considered with proposed new Regulation 6, and amendments to Rule 6-1, at the same Public Hearing.

Negative Declaration: A copy of the Negative Declaration is available for review at the Air District office at 375 Beale Street, San Francisco, on the Air District's website at http://www.baaqmd.gov/ruledev. Written comments on the Negative Declaration must be addressed to:

Guy A. Gimlen, Principal Air Quality Engineer
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California, 94105

Comments also can be sent by fax to (415) 749-5082 or by e-mail to ggimlen@baaqmd.gov.

Comments on the negative declaration will be received until close of business on Friday, July 6, 2018.

Public Hearing: On Wednesday, August 1, 2018, at 9:30 a.m., the Board of Directors of the Bay Area Air Quality Management District will conduct a public hearing to consider adoption of proposed amendments to proposed new Regulation 6: Particulate Matter—Common Definitions and Test Methods; proposed amendments to Regulation 6, Rule 1: General Requirements; proposed New Regulation 6, Rule 6: Prohibition of Trackout; and a Negative Declaration pursuant to the California Environmental Quality Act (CEQA). The hearing will be held in the Board Room of the Air District Office at 375 Beale Street in San Francisco.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

California Environmental Quality Act

Initial Study and Draft Negative Declaration

Proposed New Regulation 6: Particulate Matter - Common Definitions and Test Methods, Proposed Amendments to Regulation 6, Rule 1: General Requirements and Proposed New Regulation 6, Rule 6, Prohibition of Trackout

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105

Contact: Guy A. Gimlen
(415) 749-4734

Prepared by:

ENVIRONMENTAL AUDIT, INC.
1000-A Ortega Way, Suite A
Placentia, CA

March 2018

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CHAPTER 1

INTRODUCTION

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CHAPTER 1
Introduction

The Bay Area Air Quality Management District (Air District or District) is proposing two new rules and modifications to existing Bay Area Air Quality Management District's (BAAQMD or District) particulate matter control rules, including new draft Regulation 6: Particulate Matter-Common Definitions and Test Methods (Reg. 6), Regulation 6, Rule 1: General Requirements (Rule 6-1) and new draft Regulation 6, Rule 6: Prohibition of Trackout (Rule 6-6) (proposed new rules and amendments or proposed project). Proposed new Reg. 6 provides common definitions of terms and source test methods used in all Regulation 6 rules. Proposed new Reg. 6 does not create regulatory requirements or emissions limits. Under the California Environmental Quality Act (CEQA), the Air District is required to consider the potential for any significant adverse environmental impacts to result from these proposed regulatory revisions. Air District staff have, therefore, directed the preparation of this Initial Study pursuant to CEQA.

As explained in detail in Chapter 3, the Initial Study has found that the proposed amendments will not have any significant adverse environmental impacts. Air District staff are, therefore, proposing that the District's Board of Directors adopt a Negative Declaration under CEQA pursuant to Section 15074 of the CEQA Guidelines.

The Air District is publishing this Initial Study and draft Negative Declaration concurrently with drafts of the proposed amendments and detailed Staff Report explaining in more detail what the proposed amendments will entail. The public should review this Initial Study and proposed Negative Declaration in conjunction with those other documents in order to obtain a full understanding of the proposed amendments and their potential for adverse environmental impacts.

1.1 PURPOSE OF THIS DOCUMENT

The Initial Study is a preliminary assessment of the potential environmental impacts of the proposed project. The purpose of the Initial Study is to determine whether a Negative Declaration of Environmental Impact Report (EIR) must be prepared (CEQA Guidelines §15365). If the Initial Study determines that there is substantial evidence that any aspect of the project either individually or cumulatively, may cause a significant effect on the environment, then an EIR must be prepared. If the Initial Study determines that there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, then a Negative Declaration should be prepared (CEQA Guidelines §15063(b)). As explained herein, this Initial Study has reached the second conclusion: that there is no substantial evidence that the proposed new rules and rule amendments will have any significant adverse effect on the environment. Accordingly, the Air District has prepared a draft Negative Declaration. The Initial Study provides the documentation for the finding in the draft Negative Declaration that the project will not have a significant impact on the environment (CEQA Guidelines§15063(c)(5)).

The Negative Declaration is a written statement by the lead agency describing why the proposed project will not have a significant effect on the environment and, therefore, does not require the preparation of an EIR (CEQA Guidelines §15371). A Negative Declaration is prepared by Air District staff based on the analysis in the Initial Study, and then is proposed for adoption by the District's Board of Directors. Air District staff provide notice to the public of the draft Negative Declaration and an opportunity to comment on it, and then the Board of Directors considers the Negative Declaration at a public hearing. The Board of Directors considers the Negative Declaration along with any public comments received, and then adopts (or certifies) the Negative Declaration if it finds, using its independent judgment and analysis, that based on the whole record – including the project description, Initial Study, any mitigation measures, and any public comments – that there is no substantial evidence that the project will have a significant effect on the environment (CEQA Guidelines §15074(b)). A Negative Declaration for consideration by the Board of Directors is included as Appendix B.

1.2 SCOPE OF THIS DOCUMENT

This document evaluates the potential impacts of the proposed amendments on the following resource areas:

- aesthetics,
- agriculture and forestry resources,
- air quality,
- biological resources,
- cultural resources,
- geology / soils,
- greenhouse gas emissions,
- hazards & hazardous materials,
- hydrology / water quality,
- land use / planning,
- mineral resources,
- noise,
- population / housing,
- public services,
- recreation,

- transportation / traffic,
- tribal cultural resources, and
- utilities / service systems.

1.3 IMPACT TERMINOLOGY

The following terminology is used in this Initial Study/Negative Declaration 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 the District). 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 the District), but would be reduced to a less than significant level through the implementation of mitigation measures.

1.4 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 on Rules involving Particulate Matter and attainment status history in the Bay Area, describes the proposed rule modifications and new rules, and describes the area and facilities that would be affected by the rule.
- 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.

- Appendix A, Construction Emission Calculations, includes the detailed emission calculations for construction activities that may be required by the proposed new rules and rule amendments.

- Appendix B, Draft Proposed Negative Declaration, presents the Negative Declaration form that Air District staff are proposing for adoption by the District's Board of Directors.

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CHAPTER 2

PROJECT DESCRIPTION

Objectives

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2.0 PROJECT DESCRIPTION

This chapter describes the proposed amendments to Rule 6-1, General Requirements, as well as proposed new Regulation 6: Particulate Matter-Common Definitions and Test Methods and proposed new Rule 6-6, Prohibition of Trackout.

2.1 INTRODUCTION

The BAAQMD (Air District) is currently considering making amendments to Regulation 6, Rule 1: General Requirements (Rule 6-1). Additionally, the Air District is proposing a new Draft Regulation 6: Particulate Matter-Common Definitions and Test Methods that will apply to all Regulation 6 Rules, and a new Draft Regulation 6, Rule 6: Prohibition of Trackout (Rule 6-6).

New draft Regulation 6 address three broad categories: general provisions that apply to all rules regulating particulate matter, definitions that apply to more than one rule, and test methods that apply to more than one rule. Proposed new Regulation 6: Particulate Matter-Common Definitions and Test Methods provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate. The general provisions in amendments to Rule 6-1 are primarily focused on monitoring and prevention or corrective actions needed to be in compliance with the Regulation 6 Rules. The definitions in Regulation 6 apply in more than one particulate matter regulation. The intent is to provide the definition once, such that any future amendments to the definition can be made in one location.

Amendments to Rule 6-1 strengthen the general particulate matter limitations to equal the most stringent requirements in California, and also address particulate emissions from storage and handling of significant quantities of bulk materials, including petroleum coke and coal. These emissions present an environmental and public health concern because small dust particles cause or contribute to a wide variety of serious health problems, including asthma, bronchitis, cardio-vascular diseases, and cancer. The Air District has committed to reduce fine particulate matter levels to achieve ambient air quality standards and the related health benefits. Bulk materials are unpackaged solids less than two inches in length or diameter, such as soil, sand, gravel, aggregate, construction materials, coke and coal. Wind erosion from storage and handling of these materials can contribute to fine particulate matter pollution when bulk material dust gets carried into the atmosphere by the wind or by being handled in the open air. Coke and coal are particularly troublesome because the dust is black. Coke or coal dust is far more visible than typical geologic dust and black residue on people's cars, windows and patio furniture is especially annoying. Black coke and coal dust also absorb sunlight, so they have a greater impact on climate change than most typical dust sources. These amendments address fugitive dust from significant bulk material operations that have permits to operate from the Air District that produce or use more than ten tons per year of a bulk material, or store the bulk material in stockpiles more than three feet tall or have a footprint of more than 100 square feet.

New Rule 6-6 focuses on road dust, a large source of fine particulates. Road dust is composed of small particles from erosion of the road's surface and fine particles from vehicles driving over and

pulverizing solid materials that may have been deposited on the road. Tire wear and brake pad wear are also sources of particulates found near roadways. Rule 6-6 addresses mud and dirt that can be "tracked out" onto a paved road from a construction site, quarry, landfill or other disturbed surface. This material – referred to as "trackout" – contributes to particulate pollution because vehicle traffic on the paved road will pulverize the mud and dirt into smaller particles (known as silt), and turbulence from the vehicles entrain the silt into the air. Rule 6-6 addresses this problem by prohibiting trackout of mud and dirt onto paved roadways. Prohibition of trackout is intended to control particulate matter emissions.

2.2 OBJECTIVES

The overall objectives of the proposed new rules and rule amendments are the reduction of particulate emissions in the Bay Area. Specifically, the objectives of the amendments to Rule 6-1 are to:

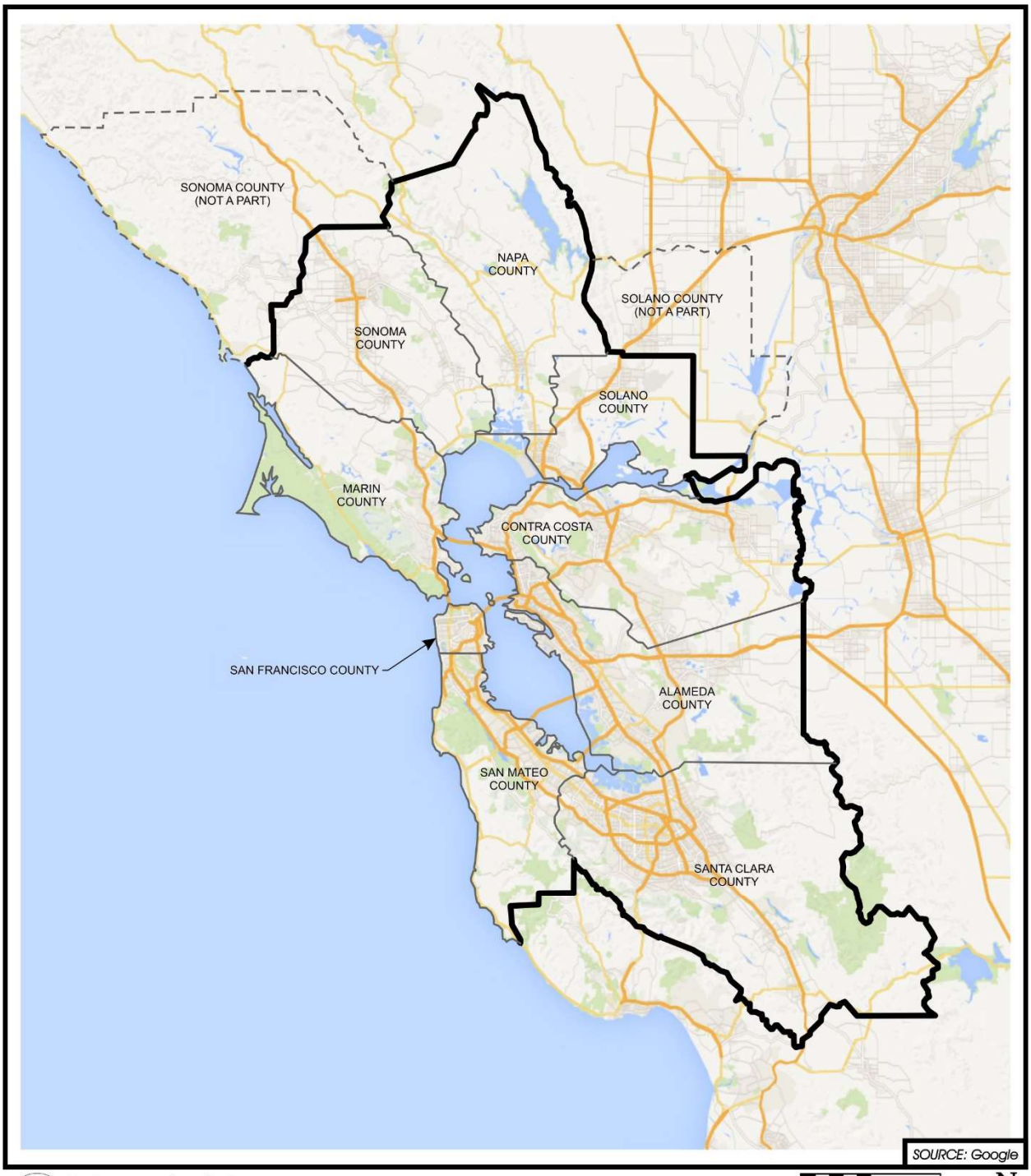
- Update the current particulate matter (PM) emissions limits for general sources of PM emissions (including both concentration limits and mass emissions limits) to reflect the most stringent emissions levels achievable.
- Clarify the testing requirements to measure PM emissions and determine compliance with the rule.
- Specify the source test methods used for compliance testing.
- Update definitions that apply to more than one rule.
- Control significant sources of PM from bulk material sites that store and handle significant amounts of bulk materials.

The objectives of Rule 6-6 are:

- Reduce road dust by reducing trackout of dirt, much and other solids onto paved roadways.
- Reduce PM and visible emissions from vehicles driving over trackout.

2.3 PROJECT LOCATION

The BAAQMD has jurisdiction of an area encompassing 5,600 square miles. The Air District 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. 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 (see Figure 2-1).



Project No. 3049

Figure 2-1

N:\3049\BAAQMD Map.cdr

2.4 BACKGROUND ON PARTICULATE MATTER AND APPLICABLE RULES

Particulate matter encompasses a diverse assortment of tiny airborne particles of different sizes, physical states, chemical compositions, and toxicity. Individual particles can vary in terms of their behavior in the atmosphere and the length of time they remain suspended in the air. PM can originate from a variety of anthropogenic stationary and mobile sources, as well as from natural sources. Typically, PM consists of a mixture of microscopic solid particles and minute liquid droplets known as aerosols that condense at atmospheric temperatures. PM can be emitted directly to the atmosphere (referred to as direct PM or primary PM), or formed in the atmosphere through reactions between other pollutants (referred to as indirect or secondary PM). Primary PM includes soot and liquid aerosols from a wide variety of sources, including cars, trucks, buses, industrial facilities, power plants, cooking and burning wood. Primary PM also includes dust from construction sites, tilled fields, paved and unpaved roads, landfills and rock quarries. Secondary PM may be formed when various pollutants from burning fuels such as sulfur oxides (SO_X) and nitrogen oxides (NO_X) react with volatile organic compounds (VOC) and ammonia in the presence of sunlight and water vapor. PM includes carbon and various metallic elements; compounds such as nitrates, organics, and sulfates; and complex mixtures such as diesel exhaust, wood smoke, and soil. Dust from roads, quarries and construction sites are generally larger, coarser particles, whereas combustion soot and secondary PM tend to be very fine particles. Unlike the other criteria pollutants, which are individual chemical compounds, particulate matter is the total weight of all particles in the air.

PM is often characterized based on particle size using the following terminology:

- **Total Suspended Particulate (TSP)**, which includes all sizes of airborne particles.
- **PM_{10}**, which is the fraction of the total particles in the atmosphere that are ten microns or smaller in diameter (one micron or micrometer equals one-millionth [10^{-6}] of a meter). This includes $PM_{2.5}$ (described next).
- **$PM_{2.5}$**, which is the fraction of total particles that are 2.5 microns or smaller in diameter, and is sometimes referred to as "fine" PM. This includes ultrafine PM (described next).
- **Ultrafine PM**, which consists of particles smaller than 0.1 micron in diameter.

Larger particles weigh the most, so large particles represent the largest fraction in terms of weight, whereas the smaller particles are more numerous and have more surface area in aggregate but usually contribute less toward the total mass of PM_{10}. Ultrafine PM is estimated to account for roughly 90 percent of the total number of particles but usually represent much less of a percentage of the mass (weight).

When the 1970 Clean Air Act was adopted, regulatory efforts to address PM focused primarily on Total Suspended Particulate (TSP), the generic name for all particles of any size. Regulation 6, Particulate Matter; Rule 1: General Requirements was developed at that time. Subsequently, scientific evidence pointed to smaller particles as posing the most serious health consequences. Therefore, in 1987, the United States Environmental Protection Agency (U.S. EPA) replaced its TSP clean air standard with a PM_{10} clean air standard – one that regulated particles less than 10

microns in diameter. In 1997, the U. S. EPA augmented its PM_{10} standard with a $PM_{2.5}$ clean air standard focused on particles less than 2.5 microns in diameter.

2.4.1 REGULATORY FRAMEWORK

The discussion below describes the current regulatory framework addressing PM emissions, including a review of the Air District's existing PM regulations and how they relate to state and federal law

2.4.1.1 Overview Current of BAAQMD PM Regulations

The Air District has long been concerned about particulate matter. Regulation 6 was adopted in 1973, as have several regulations that address PM, including Regulation 5, Open Burning. However, on-going research and developments in medical science and public health have identified small particulates as having the greatest health impact. PM regulations that began addressing TSP have subsequently focused on PM_{10} and $PM_{2.5}$, and have become more stringent as the health impact of fine particles becomes more clear. The Air District's lack of attainment with the California Ambient Air Quality Standards has caused stronger regulatory action to address PM. There are currently eleven Air District rules directly addressing PM emissions:

- **Regulation 2, Permits, Rule 2: New Source Review** – This rule requires new and modified sources of specified "criteria" pollutants, including PM, to implement the "Best Available Control Technology" (BACT) to limit emissions. The BACT standard is a technology-forcing requirement that requires sources to install the latest state-of-the-art emissions control technology.

- **Regulation 5, Open Burning** – This rule prohibits open fires within the San Francisco Bay Area, with certain exceptions.

- **Regulation 6, Particulate Matter, Rule 1: General Requirements** – This rule contains the Air District's general limitations on particulate matter emissions, and is the rule for which the Air District is currently proposing amendments. This rule is described in more detail in the next section.

- **Regulation 6, Particulate Matter, Rule 2: Commercial Cooking Equipment** – This rule limits the PM_{10} emissions from charbroilers used in restaurants.

- **Regulation 6, Particulate Matter, Rule 3: Wood Burning Devices** – This rule prohibits wood burning during wintertime "Spare the Air" alerts.

- **Regulation 6, Particulate Matter, Rule 4: Metal Recycling and Shredding Operations** – This rule requires metal recyclers to develop and implement site specific emissions control plans approved by the Air District.

- **Regulation 6, Particulate Matter, Rule 5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units** – This rule establishes a limit of ten parts per million by volume (dry basis) for ammonia from FCC's, or requires the refinery to conduct operational testing and source tests to establish enforceable ammonia emission limits that minimizes total $PM_{2.5}$ emissions.

- **Regulation 9, Inorganic Gaseous Pollutants, Rule 13: Nitrogen Oxides, Particulate Matter, and Toxic Air Contaminants from Portland Cement Manufacturing** – This rule requires that TSP emissions (U.S. EPA Test Method 5) are less than 0.04 pounds per ton of clinker produced from the kiln, and less than 0.04 pounds per ton of clinker produced from the clinker cooler. In addition, emissions from any miscellaneous operations or emission point must meet opacity limits of no more than ten percent for no more than cumulative three minutes in any hour observation period. Each facility must also implement a wide variety of Fugitive Dust Mitigation Control Measures.

- **Regulation 10: Standards of Performance for New Stationary Sources** – This rule incorporates the U.S. EPA's requirements for New Source Performance Standards (NSPS) by reference into the Air District's regulations.

- **Regulation 12, Miscellaneous Standards of Performance, Rule 4: Sand Blasting** – This rule requires sand blasting operations to meet stack opacity limits of no more than 20 percent for no more than cumulative three minutes in any hour observation period.

- **Regulation 12, Rule 13: Foundry and Forging Operations** – This rule requires foundry and forging operations to develop and implement site specific emissions control plans approved by the Air District.

The Air District currently has a few PM rules that apply broadly to all sources, and several additional rules that apply to specific industries and categories of PM sources. As the Air District moves forward to further control PM emissions, staff will consider each large source category of PM emissions and determine the best approach to control that source category. Such initiatives will be undertaken in separate rulemaking projects. New draft Regulation 6: Particulate Matter-Common Definitions and Test Methods is proposed to provide the over-arching definitions and test methods for the current regulations and potential future source-specific regulations.

2.4.1.2 Interplay with State and Federal PM Requirements

Almost all California Air Resources Board PM-related regulations are directed at mobile sources – primarily diesel engines. With respect to stationary sources, state law authorizes local air districts to determine the best method to regulate stationary sources of PM emissions within their district. adopt PM regulations and leaves the ultimate decision of how best to regulate stationary source PM emissions to each district's Board of Directors. California air pollution control laws set standards for several specific source categories, such as pile-driving hammers, sandblasting operations, and portable diesel equipment in order to ensure statewide consistency, and state law provides guidelines for the local air districts to regulate agricultural burning.

Federal law also leaves the primary role in regulating PM emissions from stationary sources to local agencies. The U.S. EPA has adopted regulations to limit criteria pollutants from new and modified sources known as NSPS, as well as regulations aimed at the toxic air quality impacts known as National Emissions Standards for Hazardous Air Pollutants (NESHAP). The federal NSPS and NESHAPs encompass a wide variety of specific stationary source categories. The federal regulations delegate responsibility to enforce these requirements to the local air quality agencies. The Air District has incorporated the NSPS by reference into Air District regulations in Regulation 10; and it enforces the NESHAPs by incorporating the NESHAP standards into Air District permit conditions for affected sources, which are enforceable by the Air District under the California Health & Safety Code. Beyond these requirements, the Federal Clean Air Act also authorizes local districts to adopt additional, more stringent requirements as needed to achieve the National Ambient Air Quality Standards.

2.5 PROPOSED PROJECT DESCRIPTION

The descriptions of proposed amendments to New Regulation 6, Rule 6-1 and New Rule 6-6 are described below.

2.5.1 NEW REGULATION 6: PARTICULATE MATTER – COMMON DEFINITIONS AND TEST METHODS

Proposed new Regulation 6: Particulate Matter-Common Definitions and Test Methods provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

2.5.2 AMENDMENTS TO REGULATION 6-1

2.5.2.1 Current Provisions of Rule 6-1: General Limitations

The current TSP emissions limits in Rule 6-1 have become significantly outdated. As a result, most facilities within the Bay Area are actually achieving PM emissions rates well below what is required. This outcome has been driven in part by the BACT requirement in the Air District New Source Review (NSR) permitting regulations (Regulation 2-2). BACT requires facilities to install the most effective emission control technology when a new source is installed or an existing source is modified, even if that level of control is not required by Rule 6-1. As a result, the controls required by BACT have evolved far ahead of the requirements in Rule 6-1, and for many facilities, the permit conditions established by BACT set the PM emissions standards for that facility.

2.5.2.2 Proposed Amendments to Rule 6-1: General Provisions

The proposed amendments to Rule 6-1 fall into three broad categories:

- Update the current particulate matter emissions limits for general sources of PM emissions (including both concentration limits and mass emissions limits) to reflect the most stringent emissions levels achievable.
- Clarify the testing requirements to measure PM emissions and determine compliance with the rule.
- Specify the source test methods used for compliance testing.

2.5.2.3 Update Total Suspended Particles Limits for General Sources

Sections 6-1-310 and 6-1-311 currently establish limits on the concentration of TSP in each source's exhaust and the total mass of TSP emitted, respectively. The draft amendments to Rule 6-1 update the rule within its current structure: a general particulate matter rule that limits TSP emissions from a wide variety of sources. In spite of the greater concern about the health impacts from $PM_{2.5}$ and other fine particulates, this rule continues to establish (more) stringent TSP limits for three reasons:

- Reduction in TSP will result in reductions in both PM_{10} and $PM_{2.5}$ emissions. These reductions will vary by source type, since different sources have differing particle size distribution profiles.
- The current emissions standards that apply generally to all particulate matter sources are TSP concentration and TSP weight emissions limits. Extensive research and testing on many different types of particulate matter sources would be necessary to establish parallel PM_{10} or $PM_{2.5}$ concentration and weight limits for the wide variety of sources covered by Rule 6-1.
- Source specific rule-making is a better approach to establish appropriate PM_{10} or $PM_{2.5}$ concentration and weight limits for each source category.

The draft amendments reduce the existing limits to reflect emissions from the most effective emission control technology.

2.5.2.4 Bulk Material Storage and Handling

Amendments to Rule 6-1 will also address particulate emissions from storage and handling of significant quantities of bulk materials, including petroleum coke and coal. These emissions present an environmental and public health concern because small dust particles cause or contribute to a wide variety of serious health problems, including asthma, bronchitis, cardio-vascular diseases, and cancer. Bulk materials are unpackaged solids less than two inches in length or diameter, such as soil, sand, gravel, aggregate, construction materials, coke and coal. Wind erosion from storage and handling of these materials can contribute to fine particulate matter pollution when bulk material dust gets carried into the atmosphere by the wind or by being handled in the open air. Coke and coal are particularly troublesome because the dust is black. Coke or coal dust is far more visible than typical geologic dust, and black residue on people's cars, windows and patio furniture is especially annoying. Petroleum coke and coal dust also absorb sunlight, so they have a greater impact on climate change than most typical dust sources.

The amendments to Rule 6-1 address fugitive dust from significant bulk material operations that have permits to operate from the Air District, including coke and coal, that produce or use more than ten tons per year of a bulk material, or store the bulk material in stockpiles more than three feet tall or have a footprint of more than 100 square feet. This amendment imposes the following requirements for such facilities:

- No source may create a fugitive dust plume greater than five feet long, five feet wide, or five feet tall that exceeds ten percent opacity for more than a cumulative three minutes in any sixty-minute observation period (five percent of the time) using U.S. EPA Test Method 9, or as dark in shade as that designated as Number 0.5 on the Ringelmann Chart.
- No source may create a visible fugitive dust plume that carries beyond the property line of the facility.
- Any spill of bulk material more than six inches high or covers more than 25 square feet must be cleaned up or stabilized with moisture, a chemical dust suppressant, or a wind screen. Cleanup activities may not exceed the visible fugitive dust plume limitations.

Bulk material storage and handling provisions will affect approximately 120 facilities that store and handle bulk materials, ten of which handle petroleum coke, and three facilities that store and handle coal. Approximately 40 of these facilities already have controls for fugitive dust, mostly water sprays. Wind breaks are a very effective method to control wind erosion that initiates fugitive dust plumes, particularly when bulk materials are actively conveyed from one place to another. Emission reductions are estimated to be 0.37 tons per day of PM_{10}, with approximately 0.03 tpd of emissions being $PM_{2.5}$. The new rule will reduce emissions of particulate matter in the Bay Area, thereby improving public health and reducing nuisance dust deposited on nearby neighbor's property.

2.5.2.4.1 Bulk Material Source with more than 6 lbs. per day TSP emissions

There are 72 facilities with 134 sources of more than six lbs. per day of TSP emissions. Forty-four of these sources are already equipped with water spray systems, and the other 90 of these sources do not currently have any dust controls. Air District staff estimates that the 44 sources may elect to upgrade their existing water sprays to water fog or water mist systems in order to reduce water use, but this will not significantly reduce emissions. Air District staff estimates that the remaining sources will be controlled with wind screens, transfer point shrouds, and loading/unloading chutes. Some judicious use of water fog and water mist systems may be necessary in locations where it is difficult to fit wind screens or shrouds. Air District staff expects that less than half of the 90 sources will require supplemental water fog or sprays along with wind screens. In addition, Air District staff estimates that only half of these sources will actually install controls, because the facilities will be able to improve their operations to meet the ten percent opacity requirements. Emissions reductions are estimated based on only 45 of the sources will be fitted with emissions control. Air District staff assumes wind screens/shrouds and loading chutes are 70 percent effective, resulting in emission reductions of 0.37 tons per day of PM_{10}, and 0.03 tons per day of $PM_{2.5}$.

2.5.2.4.2 Bulk Material Sources with 2 – 6 lbs. per day TSP emissions

There are 72 facilities with 123 sources of TSP emissions ranging from four to six lbs per day (some of these facilities also have sources with greater than 6 lbs. per day of TSP emissions). Forty of these sources are already equipped with water spray systems, and the other 83 of these sources do not currently have any dust controls. Air District staff estimates that some of the 40 sources with water sprays may be upgraded to water fog or water mist systems to reduce water use, but will not significantly reduce emissions. Air District staff estimates that the remaining sources will likely not be controlled with wind screens, transfer point shrouds, and loading/unloading chutes. Current emissions of 2 – 6 lbs. per day may be small enough to meet the visible emissions performance objective of ten percent opacity without installing additional controls. Air District staff assumes no additional emissions reductions from these sources.

A number of different approaches can control fugitive dust from bulk material stockpiles, transfer operations including scooping, crushing, conveying, and loading. The draft new visible emissions limit and requirements for windscreens are expected to reduce fugitive dust by at least 70 percent. Each of the impacted facilities currently has some of this equipment, so additions or modifications to this equipment would be minor for these facilities.

2.5.3 NEW REGULATION 6, RULE 6: PROHIBITION OF TRACKOUT

New Rule 6-6 focuses on road dust, a large source of fine particulates. Road dust is composed of small particles from erosion of the road's surface and fine particles from vehicles driving over and pulverizing any solid materials that may have been deposited on the road. Tire wear and brake pad wear are also sources of particulates found near roadways. Draft new Rule 6-6 addresses mud and dirt that can be "tracked out" onto a paved road from a construction site, quarry, landfill or other disturbed surface. This material – referred to as "trackout" – contributes to particulate pollution because vehicle traffic on the paved road will pulverize the mud and dirt into smaller particles (known as silt), and turbulence from the vehicles entrain the silt into the air. Rule 6-6 addresses this problem by prohibiting trackout of mud and dirt onto paved roadways. Prohibition of trackout is intended to control $PM_{2.5}$, particularly around these areas that can impact nearby young and elderly people, or people with breathing issues.

The principal requirements in the draft new Rule 6-6 apply to bulk material sites, large construction sites, or large disturbed surface sites greater than one acre. These sites:

- Prohibition of Trackout onto Paved Roadways: shall not allow solids from the site to deposit on the adjacent paved road:
    - Any trackout on the paved roadway or paved roadway shoulder cannot exceed a cumulative 25 linear feet of tire tracks, or cumulative 25 square feet at any exit from the site during the workday, and
    - No visible roadway material is allowed on paved roadways or paved roadway shoulder at any exit from the site at the end of the workday.
- Cleanup of Trackout: shall not allow significant visible emissions (a dust plume) during cleanup of visible roadway material.

New Rule 6-6 will affect about 150 – 250 large bulk material, large construction and large disturbed surface sites. Large bulk material sites consist of approximately ten quarries, ten asphalt

plants, and five other miscellaneous bulk solids facilities), large construction sites (150 – 200 construction sites at any given time), and large disturbed surface sites (approximately 15 landfills and ten other unpaved equipment and material storage sites) in the Bay Area. Each of these facilities is currently required to meet a project CEQA requirement, or a Regional Water Quality Control Board requirement to control trackout onto paved roads, but enforcement appears to be spotty. The District found many locations where significant mud and dirt had been tracked out from the exits of these sites and enhanced enforcement by the Air District will improve emissions performance.

2.5.3.1 Summary of Estimated Emission Reductions from Entrained Road Dust

Rule 6-6 requires large bulk material sites, large construction sites, and large disturbed surface sites to take steps to prevent trackout onto paved roadways, as outlined above. Very little trackout occurs from small bulk material sites, small construction sites, and small disturbed surface sites simply because they are small with very little vehicle traffic in and out, so there is very little potential to create trackout. Thus, emission reductions are based on sites of more than one acre. Trackout prevention is currently required as part of a large facility or large construction site's Storm Water Pollution Prevention Plan. It is estimated that 50 percent of current local road dust comes from trackout. The District estimates that approximately one-third of sites are currently marginal or inadequate in their compliance with trackout requirement, and specific limits on allowable trackout and cleanup requirements will reduce PM emissions from the existing one-third marginal performers by approximately 25 percent. Twenty-five percent reduction in emissions from 50 percent of the road dust from local roads will result in emission reductions of 12.5 percent. This gives a total reduction of 2.69 tpd of TSP, 1.23 tpd PM_{10}, and 0.18 tpd $PM_{2.5}$.

The Air District is publishing the text of the proposed amendments in conjunction with this Initial Study which sets forth the specific revised regulatory language for each of these proposed changes. The proposed changes are also described in detail in the Staff Report that has been prepared for the proposed new rules and rule amendments.

2.6 POTENTIAL EMISSION CONTROL TECHNOLOGIES FOR PARTICULATE MATTER

To comply with the proposed Regulation 6 rule amendments and new Rule 6-6, some projects involving new or modified sources, may need to implement emission reduction measures. Emission reduction measures that may be taken in response to the amendments to existing rules and the proposed new rules are identified below.

2.6.1 NEW REGULATION 6: PARTICULATE MATTER–COMMON DEFINITIONS AND TEST METHODS

Proposed new Regulation 6: Particulate Matter-Common Definitions and Test Methods provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits, so no new controls will be required.

2.6.2 PROPOSED AMENDMENTS TO RULE 6-1

Most Bay Area emission sources PM limits have been established through permit conditions when the source was installed or modified. The general nature of the TSP limits in Rule 6-1 requires that they apply to all PM sources, so they are less restrictive than the permit conditions that may be applied to any specific source. As a result, these Rule 6-1 limits are not expected to impact many PM emission sources.

The more stringent TSP limits may apply to a bottle manufacturing facility in Oakland and a facility that manufactures paper tape used to join and smooth wallboard in Santa Rosa. The glass manufacturing facility is shut down with no plans to re-open. The current emissions from the paper tape manufacturer are unknown as there is no supporting source test information available. Additional source tests are required to determine whether additional controls would be required. Based on these uncertainties, any modifications to these two facilities are considered to be speculative and will not be evaluated in this document.

Amendments to Rule 6-1 will also address particulate emissions from storage and handling of significant quantities of bulk materials, including petroleum coke and coal. Methods to reduce PM emissions include the following:

- Minimize the surface area being exposed to wind erosion.
- Wind screens can be used to shield almost any bulk material stockpile, handling equipment (crushers, conveyors, transfer points), or loading/unloading operations.
- Apply dust suppression measures including water fog or water mist systems in locations where it is difficult to fit wind screens or shrouds. Existing water spray systems could be converted to water fog or water mist systems.
- Limit work on windy days.
- Portable transfer chutes and shrouds can be used for loading and unloading bulk materials.
- Control vehicle traffic movements and speed within bulk handling/storage facilities.
- Prevent dirt, mud, and solids spills; and clean up bulk material that has spilled to prevent re-entrainment.

The estimated improvements that will be implemented by sources regulated under amendments to Rule 6-1 are summarized in Table 2-1. Wind barriers or enclosures are effective at reducing wind velocity and controlling wind erosion. Research on wind barrier design shows that the most effective designs have 50 percent porosity, and the height of the windbreak should be as high as the bulk material handling operation or stockpile that it protects. Wind screens are estimated to be 70 percent effective at reducing fugitive dust (BAAQMD, 2017). Enclosing bulk handling stockpiles and operations would be expected to be more effective in fugitive emission control.

TABLE 2-1
SOURCES IMPACTED UNDER REGULATION 6 AMENDMENTS

Regulation 6 Requirements	Number of Sources Affected	Estimated Improvements

Bulk Material Sources (more than 6 lbs/day)	44 (18 facilities)	Upgrades to water spray/fog systems
	45 (27 facilities)	Wind screens, transfer point shrouds, loading/unloading chutes, improvements to existing water fog/spray systems
	45 (27 facilities)	Operational improvements
	5 (5 facilities)	New water fog systems
Bulk Material Sources (2-6 lbs/day)	40 (24 facilities)	Upgrades to existing water fog/mist systems
	83 (48 facilities)	No additional control required

In addition to wind screens, judicious use of water is the next most effective way to control dust. Water fog or mist systems can be used to control dust during active handling operations, during bulk material moving operations. Water fog and mist systems create small water droplets that are more effective at contact with small dust particles than water sprays, water hoses or water trucks. Water fog and mist systems use five to ten percent of the water used by water spray systems to accomplish dust control. These water fog systems can also be even more effective when a surfactant (e.g., soap) is used to help the water contact and adhere to the solid particles of dust more easily.

2.6.3 PROPOSED NEW REGULATION 6 PARTICULATE MATTER, RULE 6–6 PROHIBITION OF TRACKOUT

Draft Rule 6-6 requires large bulk material sites, large construction sites, and large disturbed surface sites to take steps to prevent trackout onto paved roadways. Trackout prevention is currently required as part of a large facility or large construction site's SWPPP. The District estimates that 50 percent of current local road dust comes from trackout and approximately one-third of sites are currently marginal or inadequate in their compliance with trackout requirements. Methods to reduce trackout include the following:

- Water can be used at small bulk sites, construction sites, and disturbed surface sites to control fugitive dust.
- Limit vehicle traffic to paved or stabilized roads.
- A cleanup crew can use hand brooms and shovels or dust pans to clean up trackout that does occur.
- At large sites, trackout can be prevented by using a "grizzly" bars or a "rumble grate."
- Truck wash stations can be installed.
- Hand shovels and sweeping, or street sweepers can be used to clean up trackout from streets.

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CHAPTER 3

EVALUATION OF ENVIRONMENTAL IMPACTS

Introduction

General Information Form

Summary Checklist:
Environmental Factors Potentially Affected

Determination

Detailed Checklist and Discussion:
Evaluation of Environmental Impacts

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CHAPTER 3

Evaluation of Environmental Impacts

INTRODUCTION

The Initial Study is required to identify and evaluate the proposed project's environmental effects. The California Natural Resources Agency has published a checklist for lead agencies to use in doing so, in Appendix G of the CEQA Guidelines. The Appendix G environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. The Guidelines specifically authorize and encourage the use of Appendix G to satisfy the legal requirements for sufficiency of the Initial Study. (Guidelines §§ 15063(d)(3) and 15063(f).)

The Appendix G checklist consists of four elements:

- A general information form, which identifies some basic information about the proposed project.
- A summary checklist of "Environmental Factors Potentially Affected," which lists each resource area evaluated and indicates whether or not the proposed project may potentially have a significant impact in that area.
- A "Determination" form, which states the conclusion that Air District staff has reached as to whether there will be any potentially significant impacts and whether an EIR or a Negative Declaration will be prepared.
- A detailed "Evaluation of Environmental Impacts" checklist, which provides the full analysis and explanation of whether there will be any potentially significant impacts for each impact area.

Each of these elements of Appendix G is set forth below.

GENERAL INFORMATION

Project Title:	Negative Declaration for Proposed New Regulation 6: Particulate Matter – Common Definitions and Test Methods, Proposed Amendments to Rule 6-1, General Requirements, and Proposed New Rule 6-6, Prohibition of Trackout
Lead Agency Name:	Bay Area Air Quality Management District
Lead Agency Address:	375 Beale Street, Suite 600 San Francisco, California 94105
Contact Person:	Guy Gimlen
Contact Phone Number:	415-749-4734
Project Location:	The proposed new Regulation 6, proposed amendments to Rule 6-1 and new Rule 6-6 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 County and southern Sonoma County.
Project Sponsor's Name:	Bay Area Air Quality Management District
Project Sponsor's Address:	375 Beale Street, Suite 600 San Francisco, California 94105
General Plan Designation:	Regulation 6 applies to the area within the jurisdiction of the Bay Area Air Quality Management and would encompass all general plan designations within the Bay Area.
Zoning:	Regulation 6 applies to the area within the jurisdiction of the Bay Area Air Quality Management and would encompass all types of zoning within the Bay Area.
Description of Project:	See Chapter 2.
Surrounding Land Uses and Setting:	See "Affected Area" in Chapter 2.
Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?	No tribes have requested consultation.

SUMMARY CHECKLIST – ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. Impact areas in which the proposed project may have a significant impact are marked with a "✓". An explanation supporting the determination of significant impacts can be found in the Detailed Checklist and Discussion section below.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Tribal Cultural Resources	☐ 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 in 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 a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Dated: _____

_____

Victor Douglas
Rule Development Manager
Bay Area Air Quality Management District

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, Program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This checklist is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

ENVIRONMENTAL CHECKLIST AND DISCUSSION

		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 to 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 Bay Area Air Quality Management District covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano County and southern Sonoma County. 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. Important views of natural features include the Pacific Coast and ocean, San Francisco Bay, Mount Tamalpais, Mount Diablo, and other peaks and inland valleys of the Coast Range. Enclosed views like those along roads winding through redwood groves, and broader views of the ocean and lowlands, such as along ridgelines, are in abundance in the Bay Area. Cityscape views offered by buildings and distinctive Bay Area bridges are also important built visual resources to the region (ABAG, 2013). Because of the variety of visual resources, scenic highways or corridors are located throughout the Bay Area and includes 15 routes that have been designated as scenic highways and 29 routes eligible for designation as scenic highways (ABAG, 2013).

The proposed two new rules and amendments to Rule 6-1 will affect stationary sources with fugitive PM emissions in the Bay Area. Some of these sources are located in industrial areas (e.g., bulk material storage and handling facilities). Large disturbed surface sites (e.g., landfills) would also tend to be located within industrial areas. Large construction sites that would be affected by Rule 6-6 and required to prevent trackout onto paved roadways could be located in various land uses throughout the Bay Area. Scenic highways or corridors are generally not located in industrial areas.

Regulatory Background

Visual resources are generally protected by the city and/or county general plans through land use and zoning requirements.

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

I a-d. The proposed new rules and rule amendments to Rule 6-1 are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required to install air pollution control equipment at bulk storage and handling facilities. Air pollution control equipment may include windscreens, enclosures, shrouds, and water mist/fog systems. The construction of air pollution control equipment would occur in existing industrial areas. This equipment would be compatible with the existing industrial character of the area and would not be expected to exceed the heights of existing equipment at existing facilities.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

For windscreens to be effective, they need to be as high as the bulk material handling operation or stockpile that it protects. Therefore, implementation of the amendments to Rule 6-1 may result in the construction of windscreens and structures that would be visible to adjacent land uses. However, bulk material storage and handling facilities are located in industrial areas. Scenic highways or corridors are generally not located in industrial areas and windscreens and structures would not be expected to block any scenic views and vistas.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures that could block scenic views and vistas. Trackout prevention at construction sites is currently required as part of Storm Water Pollution Prevention Plan (SWPPP). Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have

visual impacts, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no visual impact.

Therefore, the proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1 are not expected to impact scenic resources or vistas or degrade the existing visual character of any site or its surroundings. Similarly, the proposed rule and rule amendments are not expected to require any new lighting. The existing facilities that may be impacted by the proposed new Rule 6-6 and amendments to Rule 6-1 are currently operating and lit for nighttime work, if necessary, and no additional light or glare is expected to be added to impact day or nighttime views in the District.

Conclusion

Based upon these considerations, no significant adverse aesthetic or light and glare impacts are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
II.	**AGRICULTURE and FORESTRY RESOURCES.** Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☐	☐	☑
c)	Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				
d)	Result in the loss of forest land or conversion of forest land to non-forest use?				
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

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. Agricultural land under Williamson Act contract includes both prime and nonprime lands. Prime agricultural land includes land with certain specific soil characteristics, land that has returned a predetermined annual gross value for three of the past five years, livestock-supporting land with specific carrying capacities, or land planted with fruit or nut trees, vines, bushes or crops that have a non-bearing period of less than five years (Government Code §51200-51207). Nonprime lands include pasture and grazing lands and other non-irrigated agricultural lands with lesser soil quality.

The Bay Area has a significant amount of land in agricultural uses. In 2010, just over half of the region's approximately 4.5 million acres were classified as agricultural lands, as defined by the California Department of Conservation Farmland Mapping and Monitoring Program. Of these 2.3 million acres of agricultural land, over 70 percent (about 1.7 million acres) are used for grazing. Products grown in the Bay Area include field crops, fruit and nut crops, seed crops, vegetable crops, and nursery products. Field crops, which include corn, wheat, and oats, as well as pasture lands, represent approximately 63 percent of the Bay Area agricultural land (ABAG, 2013). In 2006, about 1.2 million acres of land were under Williamson Act contract in the Bay Area. Of this, about 203,000 acres were prime farmland and one million acres were nonprime. Lands under Williamson Act contract are primarily used for pasture and grazing and not for cultivation of crops. Nearly 70 percent of prime and nonprime lands under contract are in Santa Clara, Solano, and Sonoma counties (ABAG, 2013).

Proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1will affect stationary sources with fugitive PM emissions in the Bay Area. Some of these sources are located in industrial areas (e.g., wastewater treatment plants and bulk material storage and handling facilities). Large disturbed surface sites (e.g., landfills) also tend to be located within industrial areas. Large construction sites that would be affected by Rule 6-6 and required to prevent trackout onto paved roadways could be located in various land uses throughout the Bay Area.

Regulatory Background

Agricultural and forest 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.

Significance Criteria

Project-related impacts on agriculture and forest resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 51104 (g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Discussion of Impacts

II a-e. The proposed new Regulation 6, Rule 6-1 amendments and new Rule 6-6 are designed to minimize fugitive dust emissions from industrial sources, disturbed surface sites, and construction sites. Windscreens, enclosures, shrouds, and water mist/fog systems may be constructed at bulk material storage and handling facilities (e.g., petroleum coke and coal facilities) which are located within industrial areas. The construction of additional air pollution control equipment would occur in existing industrial areas and adjacent to existing industrial equipment. This equipment would be compatible with the existing industrial character of the area and would not be located in agricultural or forestland areas.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures that would affect agricultural resources. Trackout prevention at construction sites is currently required as part of SWPPPs. Construction activities associated with new development would be better regulated and enforced under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have agricultural impacts, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no agricultural impacts

The proposed project would not conflict with existing agriculture related zoning designations or Williamson Act contracts. Existing agriculture and forest resources within the boundaries of the Air District are not expected to be affected by the construction of enclosures, windscreens, shrouds, and water mist/fog systems within industrial areas or better enforcement of SWPPP requirements. Therefore, there is no potential for conversion of farmland to non-agricultural use or conflicts related to agricultural uses or land under a Williamson Act contract, or impacts to forestland resources.

Conclusion

Based upon these considerations, no significant adverse impacts to agricultural and forest resources are expected from the adoption of the proposed new Regulation 6, proposed amendments to Rule 6-1 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
III.	**AIR QUALITY.** 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 nonattainment 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?	☐	☐	☐	☑

Setting

The San Francisco Bay Area is characterized by a large, shallow basin surrounded by mountain ranges tapering into sheltered inland valleys. The basin is bounded by the Pacific Ocean to the west and includes complex terrain consisting of mountains, valleys and bays. 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.

For purposes of analyzing air quality impacts under CEQA, the Air District divides air quality concerns into two categories: regional concerns and localized concerns. Regional concerns involve emissions from many sources throughout the region that combine together to create unhealthy air quality regionally. These air quality concerns are addressed by ensuring that individual emissions sources do not add significantly to the Bay Area's regional air quality challenges. Localized concerns, by contrast, involve emissions that may affect people who live or work near the emissions source and may be exposed to elevated pollutant concentrations because of the source. These localized air quality concerns are addressed by evaluating the potential health effects on people located nearby (called "sensitive receptors") and ensuring that they will not be exposed to any significant health risks. (Note that in some cases, a particular pollutant may fall into both categories. This is the case with fine particulate matter, for example. In these cases, impacts associated with that pollutant are evaluated in both a regional and a localized context.)

Regional Air Quality

Regional air quality concerns are addressed by ambient air quality standards adopted by California Air Resourced Board (CARB) and the U.S. EPA. These standards set forth the maximum allowable concentrations of "criteria" pollutants in the ambient air throughout the region that are considered safe to breathe. These pollutants are called "criteria" pollutants because the standards are established by developing human-health based or environmentally-based "criteria" – i.e., science-based guidelines – for setting permissible ambient air pollutant concentrations.

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead. California has also established standards for these pollutants, as well as 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.

Air quality conditions in the San Francisco Bay Area have improved greatly since the Air District was created in 1955, and regional concentrations of criteria pollutants are now in compliance with or near compliance with most ambient air quality standards. The only criteria pollutants for which the Bay Area still exceeds any state or federal standards are ozone and particulate matter.

Ozone

For ozone, there are two types of standards, one measuring average ozone concentrations over eight-hour periods and the other measuring average ozone concentrations over one-hour periods.

For eight-hour average ozone concentrations, the Bay Area is marginally out of compliance with the most stringent state and federal standards, which are both 0.070 parts per million (ppm). The region has made substantial progress towards attaining these standards, and has recently attained the 2008 federal standard, which is 0.075 ppm. [*Determinations of Attainment by the Attainment Date etc.*, 81 Fed. Reg. 26697, 26698 (May 4, 2016)]. The region has also greatly reduced the number of days each year when ozone levels exceed the current 0.070 ppm standards, as shown in Figure 3-1. The region has not quite met the 0.070 ppm standards, however, and is designated as "non-attainment" for both the state and federal ozone standards.

For one-hour average ozone concentrations, the situation is similar. Ozone levels have been coming down and the number of days each year with air quality exceeding the one-hour standard has been greatly reduced, as shown in Figure 3-2. But the is region is still designated as "non-attainment" for the California one-hour-average ozone standard. (The federal one-hour-average standard has been revoked and replaced by the eight-hour-average standard.)

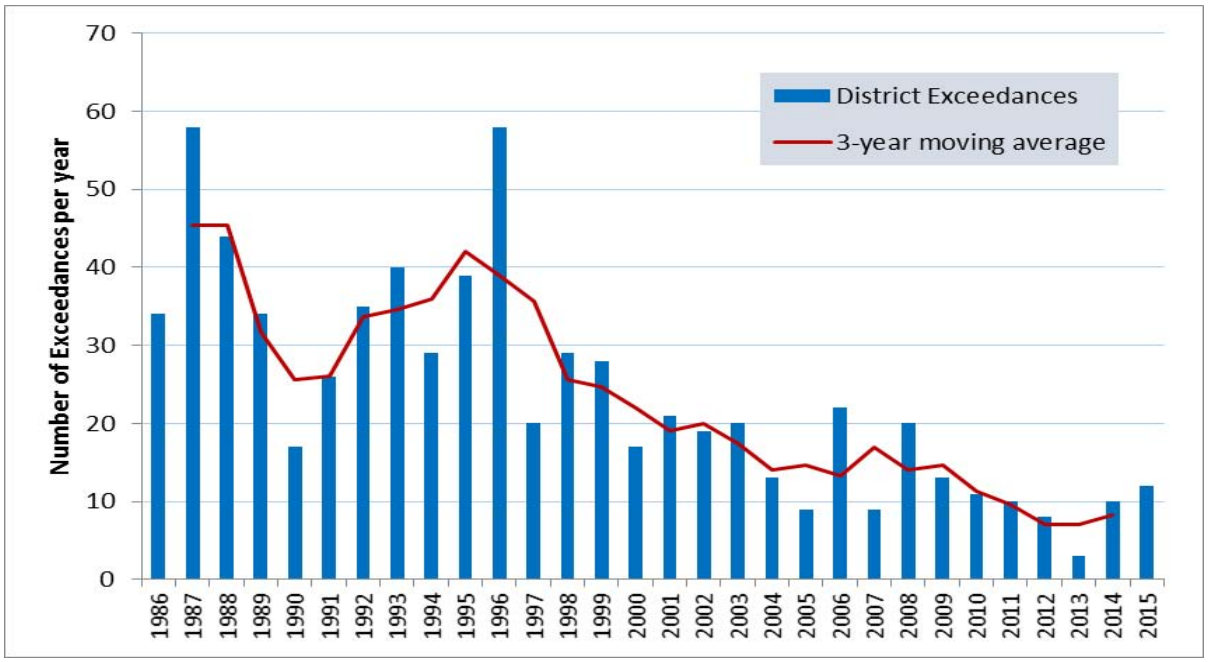
TABLE 3-1
State and Federal Ambient Air Quality Standards

POLLUTANT	STATE STANDARD	FEDERAL STANDARD	MOST RELEVANT EFFECTS
Ozone	0.09 ppm, 1-hr. avg. 0.070 ppm, 8-hr	No Federal 1-hr standard 0.070 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	0.03 ppm, annual avg. 0.18 ppm, 1-hr avg. >	0.053 ppm, ann. avg. 0.100 ppm, 1-hr 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. >	No Federal 24-hr Standard 0.075 ppm, 1-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 (PM_{10})	20 $\mu g/m^3$, annual arithmetic mean 50 $\mu g/m^3$, 24-hr average	No Federal Annual Standard 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 ($PM_{2.5}$)	12 $\mu g/m^3$, annual arithmetic mean No State 24-hr Standard	12 $\mu g/m^3$, 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.	No Federal Standard	(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. No State Calendar Quarter Standard No State 3-Month Rolling Avg. Standard	No Federal 30-day avg. Standard 1.5 $\mu g/m^3$, calendar quarter 0.15 $\mu g/m^3$ 3-Month Rolling average	(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)	No Federal Standard	Visibility based standard, not a health based standard. Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent

Particulate Matter

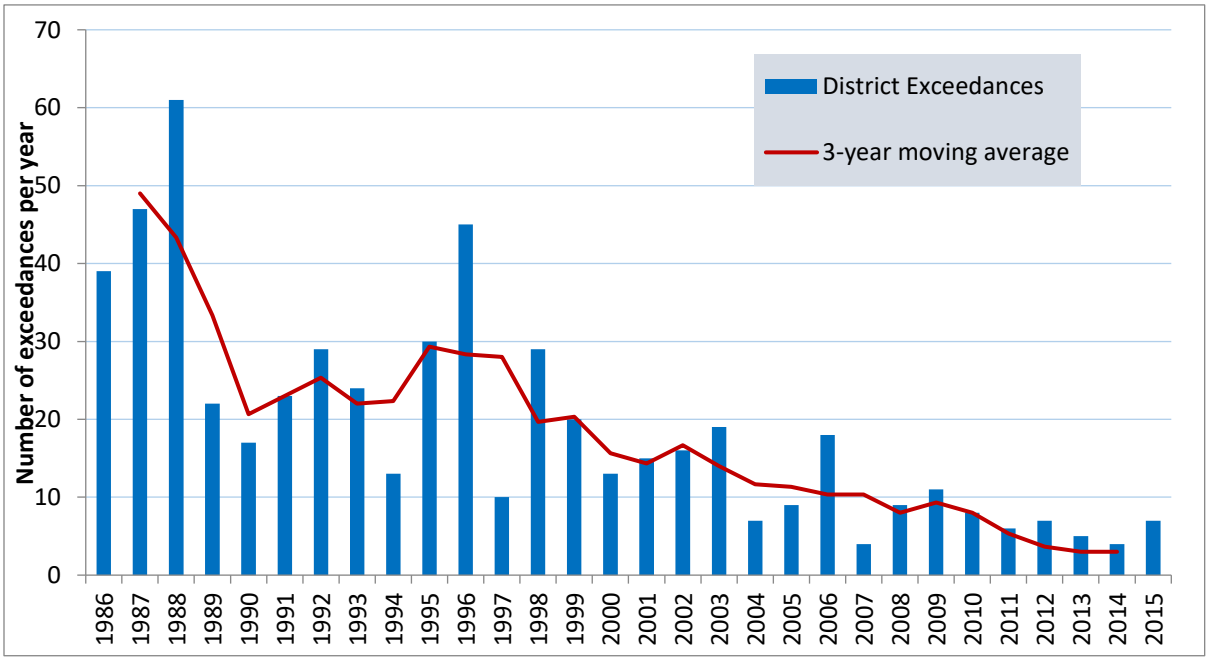
For particulate matter, ambient air quality standards have been established for both PM_{10} and $PM_{2.5}$. California has standards for average PM_{10} concentrations over 24-hour periods and over the course of an entire year, which are 50 and 20 $\mu g/m^3$, respectively. (The notation "$\mu g/m^3$" means micrograms of pollutant per cubic meter of ambient air.) For $PM_{2.5}$, California only has a standard for average $PM_{2.5}$ concentrations over a year, set at 12 $\mu g/m^3$, with no 24-hour-average standard. Conversely, the U.S. EPA has established federal $PM_{2.5}$ standards for both annual-average and 24-hour-average concentrations, but only has a 24-hour-average standard for PM_{10}. The federal standards are 12 $\mu g/m^3$ for annual-average $PM_{2.5}$, 35 $\mu g/m^3$ for 24-hour-average $PM_{2.5}$, and 20 $\mu g/m^3$ for annual-average PM_{10} (the same as the California standard).

FIGURE 3-1
Annual Bay Area Days Exceeding 0.070 ppm State 8-hour Ozone Standard, 1986-2015



Source: BAAQMD, 2017

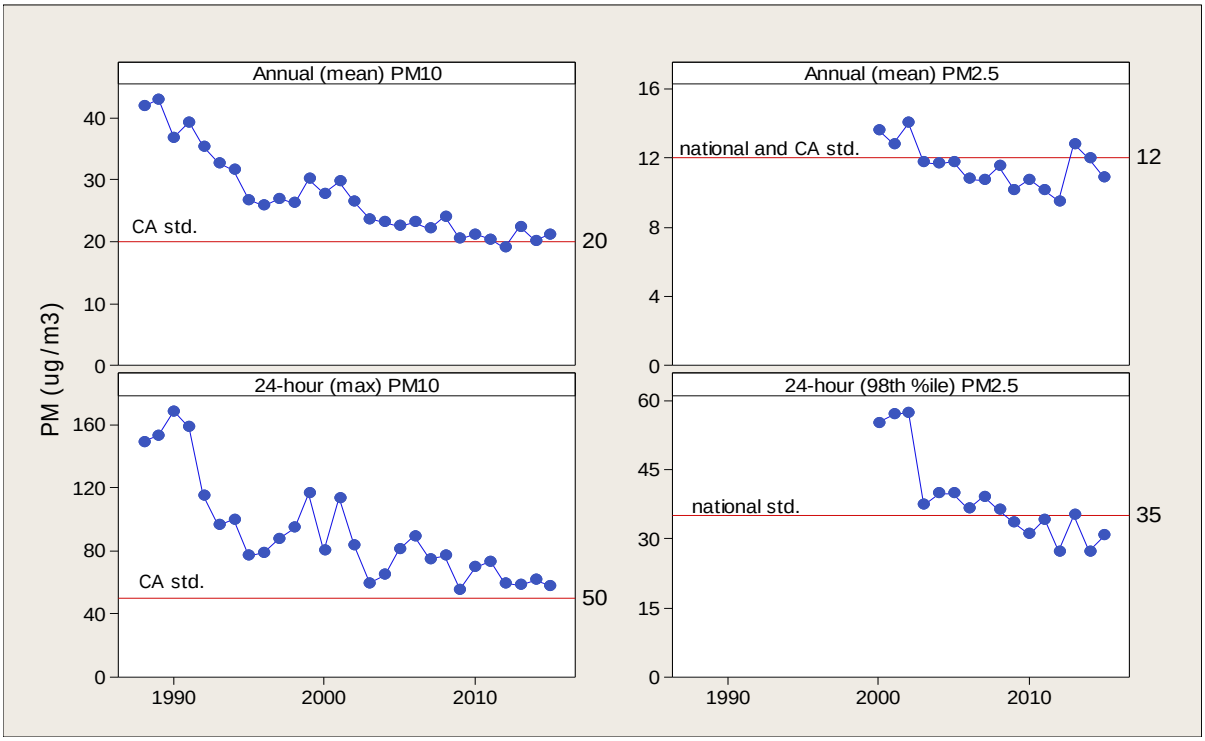
FIGURE 3-2
Annual Bay Area Days Exceeding 0.09 ppm State 1-hour Ozone Standard, 1986-2015



Source: BAAQMD, 2017

The Bay Area is in compliance with all of the federal particulate matter standards;[1] but it is out of compliance with the state standards. As with ozone, however, the region has made significant progress in reducing particulate matter concentrations and in approaching compliance with all applicable standards. Figure 3-3 shows regional particulate matter concentrations for both PM_{10} and $PM_{2.5}$, relative to the applicable California and national standards.

FIGURE 3-3: Bay Area PM Trends Relative to National and California Standards



Source: BAAQMD, 2017

To show how criteria pollutant concentrations vary across the region, Table 3-2 provides a summary of the highest recorded concentrations of the principal criteria pollutants at each of the 25 air quality monitoring sites throughout the Bay Area. For each site, the table shows the highest concentration observed during 2015, the most recent year for which full data are available, along with the number of days during the year on which the concentration exceeded the relevant air quality standard at that location.

[1] The Bay Area is still administratively designated as "non-attainment" for the federal 24-hour $PM_{2.5}$ standard. However, EPA has determined that actual $PM_{2.5}$ concentrations throughout the region have met the standard as a matter of fact. Thus, the air in the Bay Area is in compliance with the standard, even though the region is still designated as a "non-attainment" area. (*Determination of Attainment for the San Francisco Bay Area Nonattainment Area for the 2006 Fine Particle Standard*, Final Rule, 78 Fed. Reg. 1760 (Jan. 9, 2013.)

TABLE 3-2

Summary of Maximum Observed Air Pollution Concentrations and Days with Exceedances, 2015

MONITORING STATIONS	OZONE						CARBON MONOXIDE			NITROGEN DIOXIDE				SULFUR DIOXIDE				PM 10				PM 2.5				
	Max 1-hr	Cal 1-hr Days	Max 8-hr	Nat 8-Hr Days	Cal 8-hr Days	3-Yr Avg	Max 1-hr	Max 8-hr	Nat/ Cal Days	Max 1-Hr	Ann Avg	Nat 8-hr Days	Cal 8-hr Days	Max 1-hr	Max 24-hr	Nat 1-Hr Days	Cal 24-hr Days	Ann Avg	Max 24-hr	Nat Days	Cal Days	Max 24-hr	Nat 24-hr Days	3-Yr Avg	Ann Avg	3-Yr Avg
North Counties	(ppb)						(ppm)			(ppb)				(ppb)				($\mu g/m^3$)				($\mu g/m^3$)				
Napa*	79	0	69	0	0	61	3.3	1.6	0	43	8	0	0	-	-	-	-	18.6	50	0	0	38.2	1	27	10.6	11.4
San Rafael	81	0	70	0	0	61	1.4	0.9	0	44	11	0	0	-	-	-	-	16.1	42	0	0	36.3	2	26	8.6	10.0
Sebastopol*	68	0	62	0	0	*	1.3	0.9	0	37	5	0	0	-	-	-	-	-	-	-	-	29.9	0	*	6.8	*
Vallejo	85	0	70	0	1	61	2.4	1.9	0	44	8	0	0	5	1.7	0	0	-	-	-	-	41.4	3	29	9.6	9.8
Coast/Central Bay																										
Laney College Fwy*	-	-	-	-	-	-	2.7	1.6	0	106	18	1	0	-	-	-	-	-	-	-	-	37.2	1	*	10.0	*
Oakland	94	0	74	2	2	52	2.4	1.4	0	48	11	0	0	-	-	-	-	-	-	-	-	44.7	1	25	8.3	9.1
Oakland-West*	91	0	64	0	0	49	4.7	2.6	0	57	14	0	0	21.6	3.9	0	0	-	-	-	-	38.7	3	29	10.2	10.8
Richmond	-	-	-	-	-	-	-	-	-	-	-	-		12	2.8	0	0	-	-	-	-	-	-	-	-	-
San Francisco	85	0	67	0	0	48	1.8	1.3	0	71	12	0	0	-	-	-	-	19.2	47	0	0	35.4	0	25	7.6	8.4
San Pablo*	84	0	62	0	0	55	2	1.1	0	46	9	0	0	10.7	2.4	0	0	18.6	43	0	0	33.2	0	27	8.9	10.5
Eastern District																										
Bethel Island	80	0	72	1	2	66	1.1	0.9	0	29	5	0	0	8.8	1.9	0	0	13.6	33	0	0	-	-	-	-	-
Concord	88	0	73	2	4	64	1.4	1.3	0	33	7	0	0	6.7	2	0	0	13.1	24	0	0	31	0	23	8.8	7.7
Crockett	-	-	-	-	-	-	-	-	-	-	-	-	-	20.5	3.7	0	0	-	-	-	-	-	-	-	-	-
Fairfield	84	0	72	1	1	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Livermore	105	1	81	7	7	73	-	-	-	50	10	0	0	-	-	-	-	-	-	-	-	31.1	0	28	8.8	8.2
Martinez	-	-	-	-	-	-	-	-	-	-	-	-	-	14.7	4.8	0	0	-	-	-	-	-	-	-	-	-
Patterson Pass	99	4	82	5	6	*	-	-	-	19	3	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
San Ramon	106	1	84	6	6	70	-	-	-	37	6	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
South Central Bay																										
Hayward	103	2	84	2	2	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Redwood City	86	0	71	1	1	59	3.4	1.6	0	48	11	0	0	-	-	-	-	-	-	-	-	34.6	0	24	5.7	7.8
Santa Clara Valley																										
Gilroy	95	1	78	3	3	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42.2	2	18	7.2	7.5
Los Gatos	100	1	84	4	5	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Jose	94	0	81	2	2	63	2.4	1.8	0	49	13	0	0	3.1	1.1	0	0	22	58	0	1	49.4	2	30	10.0	10.2
San Jose Freeway*	-	-	-	-	-	-	2.7	2	0	61	18	0	0	-	-	-	-	-	-	-	-	46.9	1	*	8.4	*
San Martin	98	1	83	4	4	70	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
Total Days over Standard		**7**		**12**	**12**				**0**		**1**	**0**			**0**	**0**				**0**	**1**		**9**			

*Air monitoring at Sebastopol began in January 2014. Therefore, 3-year average statistics for ozone and $PM_{2.5}$ are not available. The Sebastopol site replaced the Santa Rosa site which closed on December 13, 2013.

Ozone monitoring using the federally accepted method began at Patterson Pass on April 1, 2015. Therefore, 3-year average ozone statistics are not available.

Near-road air monitoring at Laney College Freeway began in February 2014. Therefore, 3-year average $PM_{2.5}$ statistics are not available.

Near-road air monitoring at San Jose Freeway began in September 2014. Therefore, 3-year average $PM_{2.5}$ statistics are not available.

ppb = parts per billion; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

Localized Air Quality Concerns

Localized air quality concerns are addressed by evaluating the potential for adverse health impacts to sensitive receptors that may be located near an emissions source. Local air quality concerns are driven by so-called toxic air contaminants (TACs), along with $PM_{2.5}$.

Toxic Air Contaminants

TACs are chemicals that can be hazardous even at relatively low levels, and so they can present a concern for any sensitive receptors that may be located near to where they are emitted. A full list of the TACs of concern in the Bay Area can be found in Table 2-5-1 in Air District Regulation 2, Rule 5. (Federal regulations use the term hazardous air pollutants, or "HAPs," which covers essentially the same universe of air pollutants.)

The Air District measures concentrations of the most important TACs at each of its 25 monitoring sites throughout the Bay Area. Table 3-3 lists the maximum concentrations observed at any of the monitors in 2014, the most recent year for which data are available, as well as the mean (arithmetic average) for the entire year. Table 3-4 summarizes the mean TAC concentrations observed at each individual monitoring location in 2014.

TABLE 3-3
Summary of 2014 Air Toxics Monitoring Data

Compound	Maximum Observed Concentration (ppb)	Mean Concentration (ppb)
1,3-Butadiene	0.375	0.0439
Acetaldehyde	5.83	1.11
Acrolein	2	0.205
Benzene	28.1	0.594
Carbon Tetrachloride	0.149	0.0962
Chloroform	0.109	0.0273
Dichloromethane	1.62	0.226
Ethylbenzene	11	0.262
Ethylene Dibromide	0	0
Ethylene Dichloride	0.014	0.0000768
Formaldehyde	6.18	2.07
Methyl Chloroform	2.61	0.019
Naphthalene	272	59.7
N-Hexane	17.3	0.668
Styrene	7.03	0.131
Tetrachloroethylene	0.312	0.0143
Toluene	82.4	1.78
Trichloroethylene	0.222	0.00457
Vinyl Chloride	0.021	0.0000366
m/p-Xylene	29.9	0.982
O-Xylene	10	0.368

Source: BAAQMD, 2016

$PM_{2.5}$

In addition to TACs, local air quality concerns are also driven by $PM_{2.5}$. $PM_{2.5}$ is not formally identified as a TAC, but it nevertheless has respiratory, cardiovascular health impacts. A specific type of $PM_{2.5}$ called diesel PM, is a component of diesel exhaust, which IARC (International Agency for Research on Cancer), determined to be carcinogenic to humans. Thus, in addition to being a criteria pollutant subject to national and state air quality standards, $PM_{2.5}$ is also an important local air pollution concern. If there are sensitive receptors located nearby to a large $PM_{2.5}$ emissions source – especially if it is diesel PM – then those receptors could be exposed to significant health risks locally, even if the emissions do not result in concentrations exceeding the ambient air quality standards. Current trends in $PM_{2.5}$ levels in the Bay Area are discussed above in connection with criteria pollutants. (See Figure 3-3 and Table 3-2.) While the Air District does not have direct measurements of diesel PM, measurements of black carbon, which is sometimes correlated with diesel PM, are made at a few sites throughout the Bay Area. Table 3-3A lists data from these monitors in 2015.

TABLE 3-3A
Summary of 2015 Black Carbon Monitoring Data

2015

Station	Maximum 1-hr Concentration (µg/m^3)	Maximum 24-hr Concentration (µg/m^3)	Annual Mean Concentration (µg/m^3)
Laney College	41.162	6.790	1.433
Livermore	20.863	2.914	0.783
Forest Knolls	24.507	7.062	1.078
Oakland West	8.111	4.446	0.778
San Jose - Knox	9.535	4.505	1.090

TABLE 3-4
Mean Concentrations of Toxic Air Contaminants in the Bay Area in 2014 (ppb)

Monitoring Station	BENZ	CCl_4	$CHCl_3$	DCM	EBZ	EDB	EDC	PERC	TCE	TOL	VC
Bethel Island	0.117	0.0982	0.0207	0.194	0.0266	0	0.000483	0.00279	0.00128	0.205	0
Concord - Treat Blvd	0.145	0.0933	0.0334	0.195	0.0409	0	0	0.00847	0.000867	0.227	0
Crockett - Kendall Ave	0.0972	0.0954	0.0171	0.204	0.0218	0	0	0.0128	0.000367	0.136	0
Ft. Cronkhite Building 1111	0.0719	0.0929	0.0153	0.175	0.0211	0	0	0.00221	0	0.15	0
Laney College	0.21	0.0943	0.0235	0.208	0.0719	0	0	0.0085	0	0.545	0
Livermore - Rincon Ave.	0.814	0.0976	0.031	0.246	0.459	0	0	0.0204	0	2.84	0
Martinez - Jones St	0.135	0.0952	0.018	0.212	0.042	0	0	0.00272	0	0.252	0
Napa - Jefferson St	0.222	0.0989	0.0401	0.269	0.0772	0	0	0.00876	0.00193	0.505	0
Oakland – International	0.251	0.103	0.0332	0.217	0.0969	0	0	0.0164	0.00847	0.612	0
Oakland West	0.215	0.102	0.0295	0.257	0.0914	0	0	0.0134	0.00473	0.536	0
Patterson Pass - PAMS	0.373	NA	NA	NA	0.106	NA	NA	NA	NA	0.713	NA
Redwood City	0.278	0.0983	0.047	0.284	0.194	0	0.000429	0.015	0.0498	0.858	0.00075
Richmond - 7th St	0.135	0.0982	0.0267	0.231	0.0573	0	0	0.0038	0.000333	0.309	0
San Francisco - Arkansas St.	0.189	0.0918	0.025	0.164	0.0907	0	0	0.00867	0.00536	0.378	0
San Jose - Jackson St.	0.253	0.0972	0.0306	0.281	0.121	0	0.000167	0.0493	0.00391	0.664	0
San Jose - Knox Av	0.362	0.0971	0.0305	0.23	0.146	0	0	0.00523	0	0.943	0
San Pablo - Rumrill	0.166	0.0941	0.0256	0.269	0.0674	0	0	0.0031	0	0.412	0
San Rafael	0.164	0.0953	0.023	0.188	0.0469	0	0	0.0123	0.00561	0.433	0
San Ramon	0.62	NA	NA	NA	0.225	NA	NA	NA	NA	1.84	NA
Sebastopol	0.146	0.0922	0.0213	0.23	0.0497	0	0.000138	0.00272	0.00341	0.296	0
Vallejo - Tuolumne St.	0.166	0.0951	0.0262	0.202	0.059	0	0.000143	0.00475	0.000321	0.387	0

(1) BENZ = benzene, CCl_4 = carbon tetrachloride, $CHCl_3$ = chloroform, DCM = methylene chloride, EBZ = ethyl benzene EDB = ethylene dibromide, EDC = ethylene dichloride, PERC = perchloroethylene, TCE = trichloroethylene, TOL = toluene, and VC = vinyl chloride. NA = Not available.
Source: BAAQMD, 2016.

$PM_{2.5}$

In addition to TACs, local air quality concerns are also driven by $PM_{2.5}$. $PM_{2.5}$ is not formally identified as a TAC, but it nevertheless has toxic health impacts – especially in the form of diesel PM emitted from heavy-duty trucks and other diesel-powered equipment. Thus, in addition to being a criteria pollutant subject to regional air quality standards, it is also an important local air pollution concern. If there are sensitive receptors located nearby to a large $PM_{2.5}$ emissions source – especially if it is diesel PM – then those receptors could be exposed to significant health risks locally, even if the emissions do not result in concentrations exceeding the regional ambient air quality standards. Current trends in $PM_{2.5}$ levels in the Bay Area are discussed above in connection with criteria pollutants. (See Figure 3-3 and Table 3-2.)

Assessing Health Risks

Health risk from exposure to these air pollutants is measured in two ways, one addressing carcinogenic health effects and one addressing non-carcinogenic health effects.

- *Non-Carcinogenic Health Effects*

For health problems other than cancer – i.e., non-carcinogenic health effects – exposure of a sensitive receptor to TACs is measured against established "Reference Exposure Levels," which are levels that have been set by the California Office of Environmental Health Hazard Assessment (OEHHA). OEHHA sets these Reference Exposure Levels based on scientific and medical evidence showing that exposures below these levels do not result in adverse health impacts. The Reference Exposure Levels also have built-in margins of safety to ensure that exposures below those levels are indeed safe. Table 2-5-1 in Air District Regulation 2, Rule 5 lists the various Reference Exposure Levels that have been established for each TAC.

Health impacts from exposure to TACs are assessed by comparing the measured or modeled exposure of sensitive receptors near an emissions source to the applicable Reference Exposure Level to calculate a "Hazard Index", which is the ratio of the sensitive receptor's exposure to the Reference Exposure Level. Thus, if the sensitive receptor is exposed at half the Reference Exposure Level, the Hazard Index is 0.5; if the exposure is at exactly the Reference Exposure Level, the Hazard Index is 1; if the exposure is twice the Reference Exposure Level, the Hazard Index is 2; etc. Where the sensitive receptor may be exposed to multiple TACs, an individual Hazard Index calculation is undertaken for each individual TAC, and then the results are summed to give a total Hazard Index that is used to assess the total risk to the sensitive receptor for non-carcinogenic health impacts.

This Hazard Index approach is used for both short-term ("acute") and long-term ("chronic") toxic health impact concerns. It is important to consider both acute and chronic health impacts, because there could be situations where exposure levels are low enough that they do not cause any immediate health problems, but the exposure continues for a long period of time and creates health risks that way. Conversely, there could be situations where the receptor is exposed only for a short period of time, but at levels high enough to cause acute health problems. Health risk assessments, therefore, typically calculate a Hazard Index for both acute risk and chronic risk. If the Hazard Index is below 1 for both acute and chronic risk, that is an indication that the exposure does not

present any health concerns. If the Hazard Index is above 1 for either acute or chronic risk, that is an indication that the exposure is in the range where one could potentially start to observe adverse health outcomes.

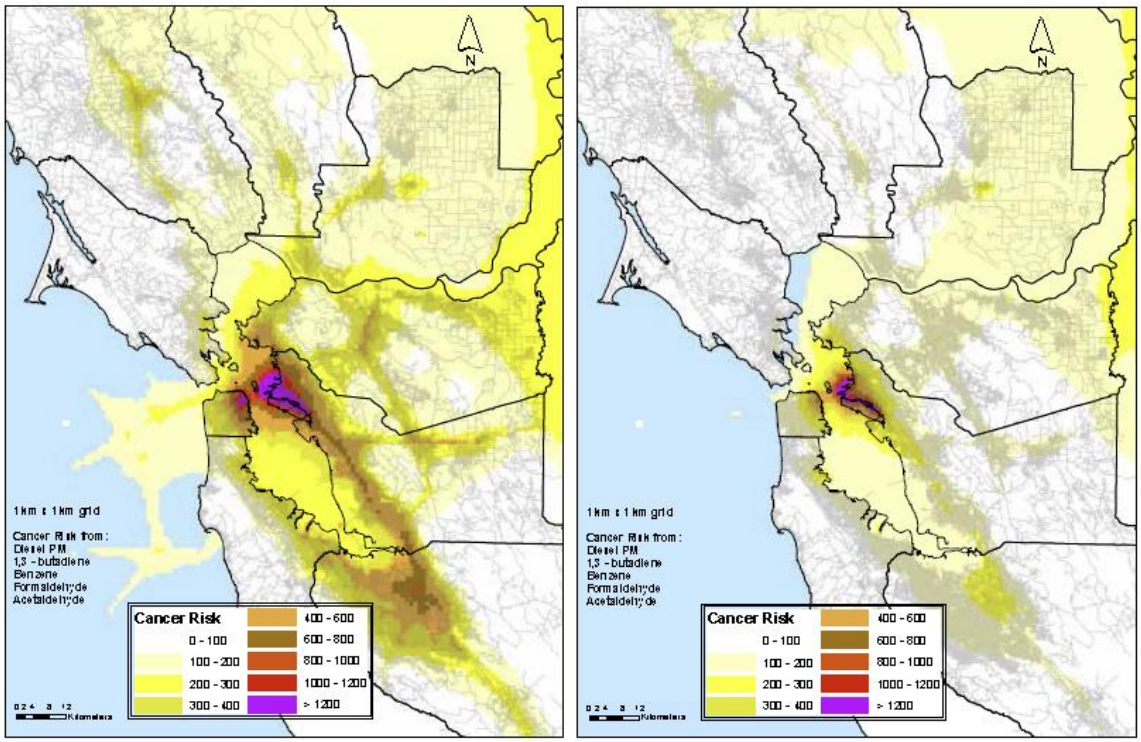
The chronic and acute Hazard Index is typically below 1 at most locations throughout the Bay Area, meaning that existing background TAC levels are not expected to cause any observable non-carcinogenic health effects. But there is always a concern with new sources of TAC emissions that they could expose sensitive receptors to TAC concentrations that would increase the Hazard Index above 1. The Air District addresses this concern by conducting health risk assessments of new TAC emissions, as well as applying other regulatory requirements as discussed in more detail below.

- *Carcinogenic Health Effects*

For air pollutants that cause cancer – i.e., carcinogenic health effects – there is no "safe" exposure level below which there will not be any cancer-causing effect. With carcinogenic effects, lowering the exposure level reduces the probability of developing cancer, but there is no level of exposure below which the risk falls completely to zero. Carcinogenic effects are therefore evaluated by assessing the additional risk that a sensitive receptor will develop cancer as a result of exposure to the air pollutant if they are exposed over their entire lifetime (assumed to be 70 years). The risk level is expressed as the number of additional cancers that would be expected out of a population of one million people exposed to an air pollutant at a given level for 70 years.

Existing carcinogenic risk from TACs varies throughout the Bay Area. Air District staff have used computer models to assess the respective carcinogenic risk at different locations, taking into account TAC emissions as well as particulate matter. Specifically, Air District staff modeled the carcinogenic risk from emissions of the four highest-risk TACs plus diesel PM. Figure 3-4 shows the results of this evaluation. Areas with lower risk are identified by lighter coloring, which corresponds to exposure levels that would be expected to cause around 100 or 200 additional cancers if one million people were exposed to that level for 70 years. Areas with higher risk identified by darker coloring, which corresponds to exposure levels that would be expected to cause 1,000 or more additional cancers if one million people were exposed to that level for 70 years. These areas are predominantly located in highly developed dense urbanized areas near high-volume roadways and other sources of diesel PM.

FIGURE 3-4: Potential Cancer Risk from Toxic Air Contaminants for the Bay Area in 2005 (left) and 2015 (right)



Source: BAAQMD, 2014

Regulatory Background

Criteria Pollutants

Criteria pollutants are regulated using a planning approach, in which the Air District develops regional plans to attain and maintain the various state and federal ambient air quality standards. These regional clean air plans identify the extent of the air quality challenges in the region and the amount of emission reductions that will be necessary to bring air pollution down to below the applicable air quality standards, and they outline various measures that the Air District and other authorities will implement in order to obtain those reductions. These measures can include adopting mandatory regulations that will force individual facilities to reduce emissions from specific types of equipment, as well as voluntary programs in which the Air District or other agencies offer incentives to businesses and individuals reduce their emissions, among other types of measures. Once the Air District has adopted a plan, it then goes forward to implement the plan and obtain the emission reductions and associated air quality improvements. The Air District adopted its most recent Clean Air Plan, entitled *Spare the Air, Cool the Climate*, in April 2017.

The Air District is required to implement this planning effort to attain and maintain the applicable ambient air quality standards under both federal and California law. The federal Clean Air Act requires the Air District to adopt plans aimed at attaining and maintaining the federal National Ambient Air Quality Standards, which the Air District must submit (through CARB) for review

and approval by the U.S. EPA. The California Clean Air Act imposes similar requirements, but they are aimed at attaining and maintaining the California standards.

Once the Air District has adopted these plans, it implements them by adopting regulations and taking other steps as outlined in the plans. The Air District uses its authority under Health & Safety Code sections 40001, 40702, and 40910 *et seq.*, as well as other statutory provisions, to adopt regulations requiring stationary sources to take certain measures to limit their emissions. These regulations can be found on the Air District's rulebook at www.baaqmd.gov/rules-and-compliance/current-rules. The Air District also uses its authority under the Health and Safety Code to provide grants and other incentives to encourage voluntary steps to reduce emissions, as well as providing leadership and advocacy to help encourage sound air quality policy choices throughout all sectors of the Bay Area's economy.

The New Source Review ("NSR") program is an important aspect of this planning approach to attain and maintain the applicable air quality standards. NSR addresses the potential for increases from new and modified sources to hinder the District's efforts to reduce emissions from existing sources as outlined in its clean air plans. As required under the federal and California Clean Air Acts, the NSR program controls emissions growth from new and modified sources so that it does not stand in the way of attaining and maintaining the applicable air quality standards.

The U.S. EPA has also adopted complementary standards called NSPS that apply to new and modified sources in a number of source categories. These NSPS are set forth in 40 C.F.R. Part 60. To date, the U.S. EPA has adopted nearly 100 different NSPS.

With respect to mobile sources, California imposes stringent motor vehicle emissions standards and fuel standards to address criteria pollutant emissions of concern. The Metropolitan Transportation Commission also implements measures designed to reduce emissions from the Bay Area's transportation infrastructure.

Toxic Air Contaminants

Toxic air contaminants emitted from stationary-source facilities are regulated using a two-fold approach, which (i) requires sources to limit their TAC emissions using pollution control equipment or other technological approaches, and (ii) requires a health risk assessment for nearby sensitive receptors to ensure that the TACs that are emitted do not create unacceptable health risks for nearby sensitive receptors.

With respect to regulations on TAC emissions, the U.S. EPA has promulgated a suite of NESHAPs for various different source categories. These standards require sources of hazardous air pollutants located at major facilities to meet emissions limitations reflecting the maximum degree of emission reduction that the U.S. EPA has determined is achievable for their particular source category, taking into account cost, health and environmental impacts, and energy requirements. These standards are also known as Maximum Achievable Control Technology standards, or "MACT" standards. A full listing of the U.S. EPA's NESHAPs can be found at www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9. Similarly, CARB has adopted a series of emissions standards called Airborne Toxic Control Measures

(ATCMs) that limit TAC emissions. A full listing of CARB's ATCMs can be found at www.arb.ca.gov/toxics/atcm/atcm.htm. The Air District has also adopted additional standards of its own for certain TACs, which are set forth in Air District Regulation 11.

With respect to preventing unacceptable health risks for nearby sensitive receptors, these concerns are addressed primarily through California's Air Toxics "Hot Spots" Act, in Health and Safety Code section 39660 *et seq*. (also referred to as "AB 2588"). The Air Toxics "Hot Spots" Act requires stationary-source facilities to periodically inventory all of their TAC emissions and conduct a Health Risk Assessment to evaluate the health risks to neighboring sensitive receptors as a result of those emissions. Facilities are required to notify the public if the Health Risk Assessment shows any significant adverse health impacts, and they must also prepare and implement risk reduction plans in an effort to reduce risks from their TAC emissions to less-than-significant levels. The Air District implements the Air Toxics Hot Spots Act within the Bay Area as part of the District's Air Toxics Control Program. The Air District also has a stringent New Source Review program for toxics, in District Regulation 2, Rule 5, which requires facilities to demonstrate that any new or modified TAC sources will not create unacceptable health risks in order to obtain a permit.

Finally, in addition to these regulatory programs, the Air District also implements an important program called the Community Air Risk Evaluation (CARE) program to help identify and address areas within the region that have the greatest localized air pollution concerns along with populations that are the most vulnerable to air pollution's impacts. The CARE program has brought together government, communities and businesses in an effort to understand and address localized areas of elevated air pollution and its adverse health impacts on communities. The Air District uses information 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.

Significance Criteria

Construction Emissions

The Air District's 1999 Thresholds of Significance did not identify specific significance thresholds for construction emissions. Rather the analysis required that certain control measures be implemented and, if implemented, the air pollutant impacts would be less than significant. The construction emissions identified in the 2010 CEQA Guidelines would be more conservative as they provide a specific threshold number above which impacts would be considered significant (see Table 3-5). Therefore, the 2010 CEQA Guidelines will be used in the current air quality analysis for construction emissions.

TABLE 3-5

Thresholds of Significance for Construction-Related Criteria Air Pollutants and Precursors

Pollutant/Precursor	Daily Average Emissions (lbs/day)
ROG	54
NOx	54
PM10	82*
PM2.5	54*
PM10/ PM2.5 Fugitive Dust	Best Management Practices

*Applies to construction exhaust emissions only.
Source: BAAQMD, 2010

Operational Emissions

The Air District's CEQA Guidelines have been developed to assist local jurisdictions and lead agencies in complying with the requirements of CEQA regarding potentially adverse impacts to air quality. The Air District first developed CEQA guidelines, which included significance thresholds for use by lead agencies, in 1999 (BAAQMD, 1999). On June 2, 2010, the Bay Area Air Quality Management District's Board of Directors unanimously adopted thresholds of significance to assist in the review of projects under the California Environmental Quality Act. These thresholds are designed to establish the level at which the District believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on the Air District's website and included in the Air District's updated CEQA Guidelines (BAAQMD, 2010).

The Air District's 2010 CEQA Thresholds have been the subject of legal challenges which are still on-going. In light of the legal challenges, the significance thresholds for the current EIR could be the significance thresholds developed in 1999. These "original" significance thresholds limited emissions for project operations to 15 tons per year or 80 pounds per day of ROG, NOx and PM10.

Alternatively, the revised 2010 CEQA Guidelines could also be used. The revised CEQA Guidelines (BAAQMD, 2010) established thresholds for regional plans as well as project-specific thresholds on both an annual basis and a daily basis. The most recently available BAAQMD draft CEQA guidelines established emission thresholds for specific projects, general plans, and regional plans. An air quality rule does not fall neatly into any of these categories. Air quality rules are typically regional in nature, as opposed to general plans, community plans and regional plans. In addition, air quality rules are usually specific to particular source types and particular pollutants. The Air Quality Plan threshold of "no net increase in emissions" is appropriate for Air Quality Plans because they include a mix of several control measures with individual trade-offs. For example, one control measure may result in combustion of methane to reduce greenhouse gas emissions, while increasing criteria pollutant emissions by a small amount. Those increases from the methane measure would be offset by decreases from other measures focused on reducing criteria pollutants. In a particular rule development effort, there may not be opportunities to make these trade-offs.

The 2010 project level stationary source thresholds are identified in Table 3-6. These thresholds are based on significant impact levels developed by the U.S. EPA as providing a significant contribution to regional non-attainment areas under the CAA. The Air District is planning to develop significance thresholds specifically for rules. Until that effort is complete and in order to provide a conservative air quality analysis, the thresholds recommended in the revised 2010 CEQA Guidelines (BAAQMD, 2010) will be used in the current air quality impacts analysis as they provide a more conservative analysis (lower thresholds) than the 1999 CEQA Guidelines.

TABLE 3-6

Thresholds of Significance for Operation-Related Criteria Air Pollutants and Precursors

Pollutant/Precursor	Daily Average Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	10
NOx	54	10
PM10	82	15
PM2.5	54	10

*Source: BAAQMD, 2010

For air toxics concerns, the threshold for a significant air quality impact is a lifetime cancer risk of 10 additional cancers per million people exposed or a non-cancer (i.e., chronic or acute) risk greater than 1.0 hazard index (BAAQMD, 2010).

Discussion of Impacts

III a. The proposed new rules and rule amendments are not expected to conflict with or obstruct implementation of the applicable air quality plan. The applicable air quality plan is the Air District's recently-adopted 2017 Clean Air Plan, *Spare the Air, Cool the Climate* ("Plan"). The Plan outlines a strategy for achieving the Bay Area's clean air goals by reducing emissions of ozone precursors, particulate matter, TACs and other pollutants in the region. The proposed new rules and rule amendments will not conflict with or obstruct implementation of the 2017 Clean Air Plan, rather they will help achieve the Plan's goals by helping to reduce PM emissions. Amendments to Rule 6-1 would implement Control Measure SS31 in the 2017 Clean Air Plan. New Regulation 6 establishes common definitions and test methods for all Regulation 6 rules. New Rule 6-6 would help reduce emissions of PM by reducing emissions from trackout, thus improving public health and air quality in the region. The amendments to Rule 6-1, new Regulation 6 and new Rule 6-6 would help achieve the goals in the 2017 Clean Air Plan of reducing PM emissions.

III b and c. The proposed amendments and new rules may result in the installation of new equipment at facilities that need to comply with the new requirements.

Construction Air Quality Impacts

Minor construction activities are expected to include upgrades to existing water spray/fog systems, installation of shroud, and operational improvements. Construction emissions associated with installing these types of equipment would be minor and would involve the transport of the new equipment which is expected to require one to two truck trips. Installation of the equipment would be expected to be limited to one to two workers and would not require any major construction equipment and no site preparation activities are expected to be required. Therefore, upgrades to water spray/fog systems and shrouds would result in minor construction emissions.

Construction activities would also be required for the construction of windscreens. Some minor construction equipment will be necessary to install windscreens. Construction emissions are summarized in Table 3-7 and detailed emission calculations are provided in Appendix A.

Construction would likely require a couple of medium-duty truck trips to deliver equipment, a construction crew of three to ten workers, and a few pieces of construction equipment (e.g., forklift, backhoe, loader, cement trucks, and hand tools). The construction of wind screens is expected to take approximately three weeks split between digging footings for the screens and constructing the screens on site. Peak emissions are expected to occur during the first phase of construction. In order to conservatively estimate peak day emissions, it is estimated that five windscreens would be installed concurrently, as shown in Table 3-7. See Appendix A for detailed emissions calculations. As shown in Table 3-7, construction emissions are expected to be less than the CEQA significance thresholds and would not be expected to result in a significant air quality impact.

TABLE 3-7

Estimated Construction Emissions Impacts
(lb/day)

Control Measure	VOC	CO	NOx	SOx	PM_{10}	$PM_{2.5}$
Windscreen Construction Peak Day Emissions	0.64	7.89	9.59	0.03	1.47	0.65
Peak Day Emissions for 5-10 Windscreens	3.2	39.5	47.9	0.2	7.3	3.2
Total[(1)]	3.2	39.5	47.9	0.2	7.3	3.2
BAAQMD CEQA Thresholds	**54**	**NE[(2)]**	**54**	**NE[(2)]**	**82**	**54**
Significant?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

1. Off-Road 2011. CO emissions from SCAQMD, 2006: http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls
2. NE - Thresholds are not established

Operational Air Quality Impacts

The overall objective of the proposed new rules and rule amendments is to reduce TSP, PM_{10} and $PM_{2.5}$ emissions from industrial sources, bulk material storage and handling facilities, disturbed sites and large construction sites. The proposed new rules and rule amendments will reduce emissions by reducing trackout at bulk storage facilities, large construction sites, and sites with

large disturbed surfaces and by requiring wind screens, enclosures, shrouds and water mist/fog systems at bulk material storage and handling facilities.

Implementation of New Regulation 6: Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Implementation of Amendments to Rule 6-1: Current PM emissions estimates from the 2011 Emission Inventory total 174.20 tons per day (tpd) of TSP, 105.63 tpd PM_{10}, and 46.31 tpd $PM_{2.5}$. The more stringent TSP limits under Rule 6-1 will impact only one moderate source of PM emissions. Most Bay Area source's PM limits have been established through permit conditions when the source was installed or modified. The general nature of the TSP limits in Rule 6-1 require that they apply to all PM sources, so they are less restrictive than the permit conditions that may be applied to any specific source. As a result, no emission reductions are expected from the proposed more stringent TSP limits.

Bulk Material Sources with more than 6 lbs. per day TSP emissions: There are 72 facilities with 134 sources of more than six lbs per day of TSP emissions. Forty-four of these sources are already equipped with water spray systems, and the other 90 of these sources do not currently appear to have any dust controls. The Air District estimates that 44 sources may elect to upgrade their existing water sprays to water fog or water mist systems in order to reduce water use, but this will not significantly reduce emissions. It is estimated that the remaining 90 sources will be controlled with wind screens, transfer point shrouds, and loading/unloading chutes. Some judicious use of water fog and water mist systems may be necessary in locations where it is difficult to fit wind screens or shrouds. The Air District expects that less than half of the 90 sources will require supplemental water fog or sprays along with wind screens. In addition, only approximately half of these sources will actually install controls, because the facilities will be able to improve their operations to meet the ten percent opacity requirements. Emissions reductions are estimated based on only 45 of the sources being fitted with emissions control. It is assumed that screens/shrouds and loading chutes are 70 percent effective, resulting in emission reductions of 0.45 tons per day of TSP, 0.37 tons per day of PM_{10}, and 0.03 tons per day of $PM_{2.5}$ (see Table 3-8).

Bulk Material Sources with 2 – 6 lbs. per day TSP emissions: There are 72 facilities with 123 sources of TSP emissions ranging from two to six lbs per day (some of these facilities also have sources with greater than six lbs. per day of TSP emissions). Forty of these sources are already equipped with water spray systems, and the other 83 of these sources do not currently appear to have any dust controls. The Air District estimates that some of the 40 sources with water sprays may be upgraded to water fog or water mist systems to reduce water use, but will not significantly reduce emissions. It is estimated that the remaining sources will likely not be controlled with wind screens, transfer point shrouds, and loading/unloading chutes. Current emissions of two to six lbs. per day may be small enough to meet the visible emissions performance objective of ten percent opacity without installing additional controls. No additional emissions reductions from these sources are expected. Table 3-8 summarizes the expected emissions reductions from the amendments to Rule 6-1

TABLE 3-8

Expected Emissions Reductions from the Proposed Project

Source Categories	TSP (tpd)	PM_{10} (tpd)	$PM_{2.5}$ (tpd)
2011 Emission Inventory Totals	174.20	105.63	46.31
Amendments to Rule 6-1 Estimated Emission Reductions	0.45	0.37	0.03
Amendments to Rule 6-1 Reductions from Total PM Emissions	0.26%	0.35%	0.06%
Rule 6-6 Estimated Emission Reductions	2.69	1.23	0.18
Rule 6-6 Reductions from Total PM Emissions	1.54%	1.16%	0.39%
Total Project Emissions Reductions	**3.14**	**1.60**	**0.21**
Total Project Emissions Reductions from Total PM Emissions	**1.80%**	**1.51%**	**0.45%**

Implementation of Rule 6-6

The Air District estimates that approximately 50 percent of current local road dust comes from trackout, with the remainder from spills, erosion, and degradation of the roads themselves. Proposed new Rule 6-6 requires large bulk material sites, large construction sites, and large disturbed surface sites to take steps to monitor and prevent trackout onto paved roadways. The Air District estimates that very little trackout occurs from small bulk material sites, small construction sites, and small disturbed surface sites simply because they are small with very little vehicle traffic in and out. Thus, emission reductions are based on large sites, with area greater than one acre.

Trackout prevention is currently required as part of a large facility or large construction site's SWPPP. The Air District estimates approximately one-third of sites are currently marginal or inadequate in their compliance with trackout requirements. The Air District estimates that specific limits on visible roadway material, monitoring and cleanup requirements will reduce PM emissions from the existing one-third marginal performers by approximately 25 percent. Twenty-five percent reductions in emissions from 50 percent of the road dust from local roads will result in emission reductions of 12.5 percent. Thus, it is estimated that the adoption of Rule 6-6 will have a total reduction of 2.69 tpd of TSP, 1.23 tpd PM_{10}, and 0.18 tpd $PM_{2.5}$. Overall emissions reductions as a result of the proposed project are summarized in Table 3-8.

Based on the above, the proposed project is expected to result in a minor increase in temporary construction emissions and a reduction in operational emissions of TSP, PM_{10} and $PM_{2.5}$, providing a beneficial impact to air quality.

CEQA Guidelines indicate that cumulative impacts of a project shall be discussed when the project's incremental effect is cumulatively considerable, as defined in CEQA Guidelines §15065(c). While the proposed project may initially create an increase in emissions for the construction or installation of control equipment, the project as a whole will result in reduced

emissions of PM. In addition, the proposed rule and rule amendments would implement Control Measure SS31 in the 2017 Clean Air Plan and help achieve the Plan's goals of reducing PM emissions to comply with ambient air quality requirements. Therefore, the cumulative air quality impacts of the proposed project are expected to be beneficial and not adversely significant.

III d. The proposed amendments to Rule 6-1, new Regulation 6 and new Rule 6-6 are not expected to result in any increases in emissions of any TACs. The rules are expected to result in emission decreases associated with control of PM emissions using new water/fog spray systems, modifications to existing water spray systems, and through the use of wind screens or shrouds. These control measures would not result in an increase in the use of hazardous materials or result in the generation of TAC emissions. The proposed new rules and rule amendments are, therefore, not expected to cause any sensitive receptors to be exposed to non-carcinogenic health risks with an acute or chronic Hazard Index exceeding 1. To the extent that any regulated facilities may be located in an area where the existing acute or chronic Hazard Index exceeds 1 (or is projected to exceed 1 based on other current or future projects), the proposed new rules and rule amendments will not result in any increased TAC emissions that would increase this risk, so the proposed new rules and rule amendments would not be making a cumulatively considerable contribution to that significant health risk.

With respect to carcinogenic risk, although nearly all developed areas in the Bay Area where regulated facilities are located are impacted by a significant carcinogenic health risk based on emissions from existing sources, the proposed new rules and rule amendments will not make a cumulatively considerable contribution to that existing significant impact. The proposed new rules and rule amendments are not expected to result in an increase in TAC emissions, and so they are not expected to cause an increase in the cancer risk that any sensitive receptor is exposed to by more than 10 in one million, which is the level at which the Air District considers the contribution to be cumulatively considerable.

III e. The proposed amendments to Rule 6-1, new Regulation 6 and new Rule 6-6 are expected to result in emission decreases associated with control of PM emissions using new water/fog spray systems, modifications to existing water spray systems, and through the use of wind screens or shrouds. These control measures would not result in an increase in the use of substances that generate odors. Therefore, proposed amendments to Rule 6-1, new Regulation 6 and Rule 6-6 are not expected to result in any increase in odorous emissions from any facilities.

Conclusion

Based upon these considerations, no significant adverse impacts to air quality are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		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 Wildlife 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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal 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.

A complex interaction of soils, topography, and climate in the Bay Area supports numerous natural communities comprised of a diversity of vegetative types that provide habitat for a diverse number of plant and wildlife species. Broad habitat categories in the region include grasslands, coastal scrubs and chaparral, woodlands and forests, riparian systems and freshwater aquatic habitat, and wetlands. Extensive aquatic resources are provided by the San Francisco Bay Delta estuary, as well as numerous other rivers and streams. Urban and otherwise highly disturbed habitats, such as agricultural fields, also provide natural functions and values as wildlife habitat (ABAG, 2013).

The proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1will affect stationary sources with fugitive PM emissions in the Bay Area. Some of these sources are located in industrial areas. Large disturbed surface sites (e.g., landfills) would also tend to be located within industrial areas. Large construction sites that would be affected by Rule 6-6 and required to prevent trackout onto paved roadways could be located in various land uses throughout the Bay Area. Biological resources are not usually located in industrial areas.

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 Wildlife, 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 Wildlife 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.

Significance Criteria

The proposed project impacts on biological resources will be considered significant if:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion of Impacts

IV a, b, c and d). The proposed new rules and rule amendments to Rule 6-1 are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required at bulk handling facilities to install windscreens, enclosures, shrouds, and water mist/fog spray systems, which are located within industrial areas. Construction activities associated with the proposed project are expected to occur in industrial areas, e.g., landfills and bulk loading facilities, where native biological resources have been removed or are non-existent. Thus, the proposed project is not expected to result in any impacts to biological resources.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPP. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have biological resource impacts, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no biological resource impacts.

Construction activities in areas that may potentially affect biological resources will occur with or without the proposed new rules and rule amendments. Thus, proposed regulatory project is not expected to affect sensitive biological resources directly or indirectly, impact riparian habitats, protected wetlands, marshes, or vernal pools, coastal wetlands and would not conflict with local policies or ordinances protecting biological resources or an adopted habitat conservation plan.

IV e and f). The proposed project is not expected to affect land use plans, local policies or ordinances, or regulations protecting biological resources such as a tree preservation policy or ordinances for the reasons already given. Land use and other planning considerations are determined by local governments and land use or planning requirements are not expected to be altered by the proposed project. Similarly, the proposed new rules and rule amendments are not expected to affect any habitat conservation or natural community conservation plans, biological resources or operations, and would not create divisions in any existing communities, as construction activities would be limited to existing facilities in industrial areas that have already been developed and graded.

Conclusion

Based upon these considerations, no significant adverse impacts to biological resources are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		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 §15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §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 of 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 proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1 will affect stationary sources with fugitive PM emissions in the Bay Area. Some of these sources are located in industrial areas (e.g., bulk material storage and handling facilities). Large disturbed surface sites (e.g., landfills) would also tend to be located within industrial areas. Large construction sites that would be affected by Rule 6-6 and required to prevent trackout onto paved roadways could be located in various land uses throughout the Bay Area.

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 §§50020.1(k) and 5024.1(g).

Significance Criteria

The proposed project impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion of Impacts

V a, b, c and d). CEQA Guidelines state that generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources including the following:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with the lives of persons important in our past;

C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;

D. Has yielded or may be likely to yield information important in prehistory or history (CEQA Guidelines §15064.5).

Generally, resources (buildings, structures, equipment) that are less than 50 years old are excluded from listing in the National Register of Historic Places unless they can be shown to be exceptionally important. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites.

Windscreens, enclosures, shrouds, and water mist systems may be constructed at bulk material storage and handling facilities (e.g., petroleum coke and coal facilities) which are located within industrial areas. Some affected stationary source facilities may have equipment or structures older than 50 years and may modify existing water/fog systems, however, this type of equipment does not meet the criteria identified in CEQA Guidelines §15064.5(a)(3).

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPPs. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have cultural resource impacts, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no cultural resource impact.

Construction activities in areas that may potentially affect cultural resources are not expected to be a result of the proposed project and could occur with or without the proposed new rules and rule amendments. Further construction activities associated with the proposed project are expected to be limited to commercial or industrial areas that have already been developed. Thus, the proposed new rules and rule amendments would not adversely affect historical or archaeological resources as defined in CEQA Guidelines §15064.5, destroy unique paleontological resources or unique geologic features, or disturb human remains interred outside formal cemeteries. Therefore, no impacts to cultural resources are anticipated to occur as a result of the proposed project as no major construction activities are required.

Conclusion

Based upon these considerations, no significant adverse impacts to cultural resources are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

	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:				
i) 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 Division of Mines and Geology Special Publication 42.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☐	☑
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑
iv) 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d) Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (1994) (formerly referred to as the Uniform Building Code), 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 Bay Area is 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 Division of Mines and Geology 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 California 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 Division of Mines and Geology (DMG) 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 reviewing procedures that will reduce losses from ground failure during future earthquakes.

Significance Criteria

The proposed project impacts on the geological environment will be considered significant if:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion of Impacts

VI a, c, and d). The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required. Windscreens, enclosures, shrouds, and water mist/fog systems may be constructed at bulk material storage and handling facilities (e.g., petroleum coke and coal facilities) which are located within industrial areas. Construction of equipment as a result of the proposed project is expected to occur in industrial areas.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the

use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPP. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have impacts on geology and soils, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no impacts on geology and soils.

New development potentially resulting in earthquake hazards is expected to be limited to wind screens and enclosures. New construction (including modifications to existing structures) requires compliance with the California Building Code. The California 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 California Building Code basis seismic design on minimum lateral seismic forces ("ground shaking"). The California Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the California Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. Compliance with the California Building Code would minimize the impacts associated with existing geological hazards.

VI b). Construction associated with the proposed project is expected to be limited to windscreens, enclosures, shrouds and mist/fog systems at bulk material storage and handling facilities. All construction would take place at already existing facilities that have been previously graded. Thus, the proposed project is not expected to result in substantial soil erosion or the loss of topsoil as construction activities are expected to be limited to existing industrial facilities.

VI e). Septic tanks or other similar alternative wastewater disposal systems are typically associated with small residential projects in remote areas. The proposed amendments to Rule 6-1 would affect stationary sources that have existing wastewater treatment systems or which are connected to appropriate wastewater facilities. Rule 6-6 affects large construction sites and bulk storage facilities and any impacts associated with septic tanks or other alternative disposal systems would occur with or without the proposed project. Further, no increase in water use or wastewater generation is expected. Additionally, facilities affected by the amendments to Regulation 6-1 are industrial or commercial facilities that are connected or would be required to be connected to appropriate wastewater treatment facilities and are not expected to rely on septic tanks or similar alternative wastewater disposal systems. Based on these considerations, septic tanks or other alternative wastewater disposal systems are not expected to be impacted by the proposed project.

Conclusion

Based upon these considerations, no significant adverse impacts to geology and soils are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII.	**GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE.** Would the project:				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☑
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

Setting

Global climate change refers to changes in average climatic conditions on the earth as a whole, including temperature, wind patterns, precipitation and storms. Global climate change is caused primarily by an increase in levels of greenhouse gases (GHGs) in the atmosphere. The major greenhouse gases are the so-called "Kyoto Six" gases – carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs) – as well as black carbon.[2] These greenhouse gases absorb longwave radiant energy (heat) reflected by the earth, which warms the atmosphere in a phenomenon known as the "greenhouse effect." The potential effects of global climate change include rising surface temperatures, loss in snow pack, sea level rise, ocean acidification, more extreme heat days per year, and more drought years.

Increases in the combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.) since the beginning of the industrial revolution have resulted in a significant increase in atmospheric levels of greenhouse gases. CO_2 levels have increased from long-term historical levels of around 280 ppm before the mid-18th century to over 400 ppm today. This increase in greenhouse gases has already caused noticeable changes in the climate. The average global temperature has risen by approximately 1.4°F (0.8°C) over the past one hundred years, and 16 of the 17 hottest years in recorded history have occurred since 2001, according to the National Oceanic and Atmospheric Administration.

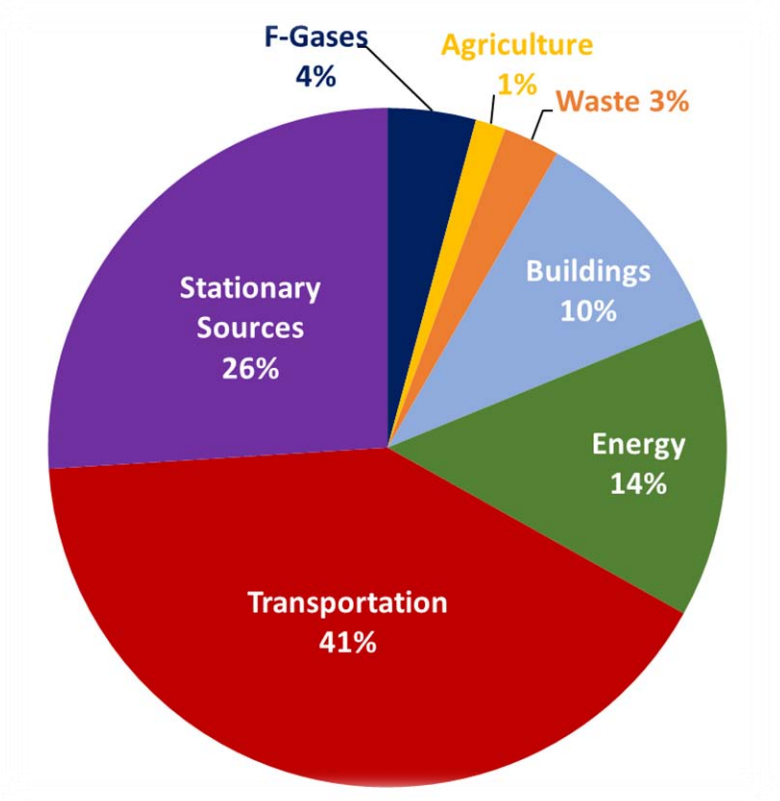
Total global greenhouse gas emissions contributing to climate change are in the tens of billions of metric tons of CO_2e per year. The Bay Area's contribution to the global total is approximately 85 million tons per year. Figure 3-5 presents a breakdown of the region's greenhouse gas emissions

[2] Technically, black carbon is not a gas but is made up of solid particulates or aerosols. It is included in the discussion of greenhouse gas emissions because, like true greenhouse gases, it is an important contributor to global climate change.

by major source categories. Transportation sources generate approximately 40 percent of the total, with the remaining 60 percent coming from stationary and area sources (see Figure 3-5).

FIGURE 3-5

2015 Bay Area Greenhouse Gas Emissions by Source Category (Total = 85 MMT CO_2e)

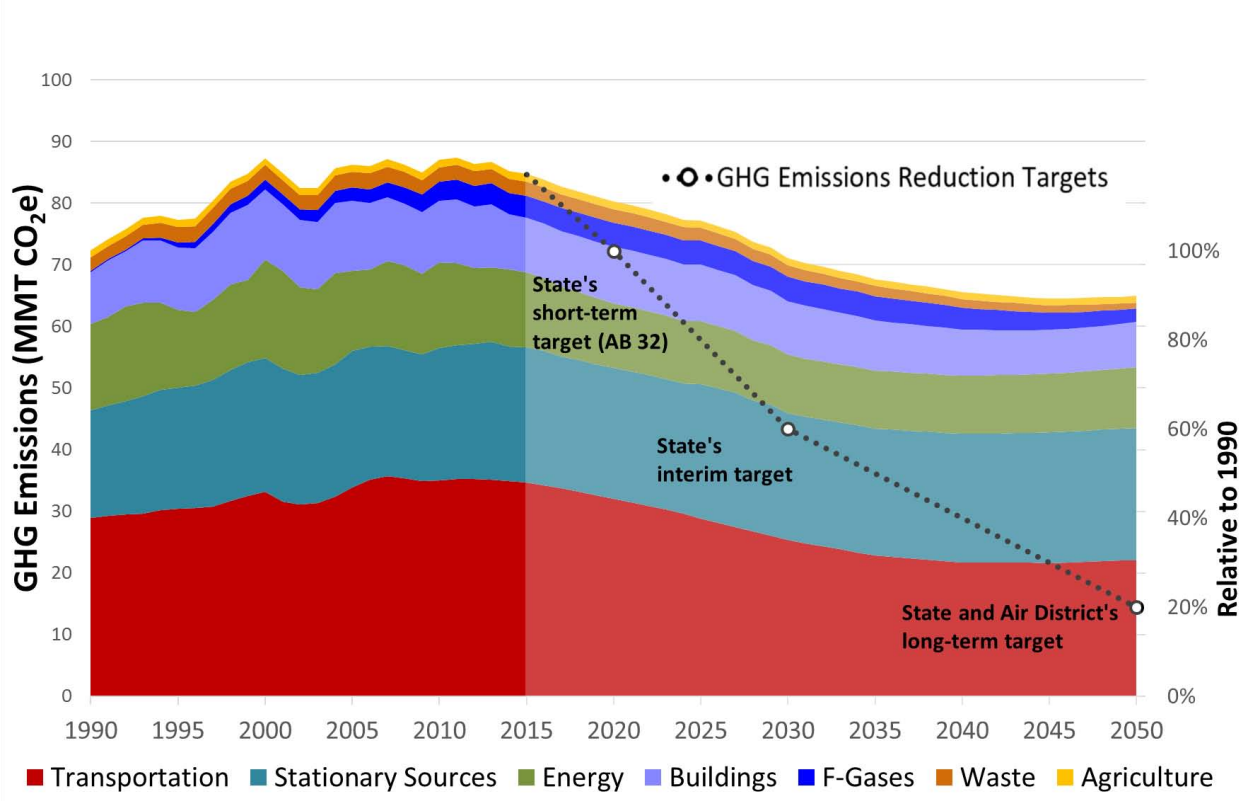


Source: BAAQMD, 2017

Historically, regional greenhouse gas emissions rose substantially as the Bay Area industrialized. But emissions have peaked recently, and they are expected to decline in the coming years. Figure 3-6 shows the Bay Area's total greenhouse gas emissions since 1990, with projections for future emissions through 2050. As the figure shows, emissions are expected to decline in the future as the region continues to shift away from burning fossil fuels and towards renewable energy resources such as wind and solar power. Emissions will need to decline even more than currently projected, however, in order to reach the aggressive targets adopted by California and by the Air District. These greenhouse gas reduction goals are represented by the dashed line on the graph in Figure 3-6.

FIGURE 3-6

Projected Bay Area Greenhouse Gas Emissions by Sector Based on State Policies



Source: BAAQMD, 2017

Regulatory Background

There is a general consensus that global temperature increases must be limited to well under 2°C in order to reduce the risks and impacts of climate change to an acceptable level. This consensus is embodied most notably in the Paris Climate Agreement, in which virtually every nation around the world committed to achieving this global goal. Limiting global climate change to no more than this amount drives greenhouse gas regulation at every level.

For purposes of the Bay Area, the most important regulatory actions on climate change have been undertaken by the State of California. To fulfill its share of the burden of keeping climate change within acceptable limits, California has committed to reducing its greenhouse gas emissions to 1990 levels by 2020, to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. This commitment is enshrined in AB 32, the Global Warming Solutions Act of 2006, which adopted the 2020 target; in 2016's SB 32 (Pavley), which adopted the 2030 target; and in Executive Order S-3-05, which adopted the 2050 target. The Air District has adopted the same 80 percent reduction target for 2050 for the Bay Area's greenhouse gas emissions, in Board of Directors Resolution 2013-11.

To achieve these emission reduction goals, the California legislature has directed the California Air Resources Board (CARB) to develop a Scoping Plan setting forth regulatory measures that CARB will implement, along with other measures, to reduce the state's greenhouse gas emissions. One of the principal regulatory measures is CARB's Cap and Trade program, which requires industrial greenhouse gas sources to obtain "allowances" equal to their greenhouse gas emissions. The amount of available allowances is subject to a "cap" on total emissions statewide, which CARB will reduce each year. Regulated facilities will either have to reduce their emissions or purchase allowances on the open market, which will give them a financial incentive to reduce emissions and will ensure that total annual emissions from the industrial sector will not exceed the declining statewide cap.

California has also adopted the so-called "Renewable Portfolio Standard" for electric power generation, which requires that at least 33 percent of the state's electric power must come from renewable sources by 2020, and at least 50 percent must come from renewables by 2030. To complement these efforts on electricity generation, the state has also committed to increasing the energy efficiency of existing buildings by 50 percent by 2050 in order to reduce energy demand.

California has also adopted regulatory measures aimed at reducing greenhouse gas emissions from mobile sources. These measures include the so-called "Pavley" standards for motor vehicle emissions and the state's Low Carbon Fuel Standard, which set limits on the carbon intensity of transportation fuels. California has also adopted SB 375, the Sustainable Communities and Climate Protection Act of 2008, which requires regional transportation and land use planning agencies to develop coordinated plans, called "Sustainable Communities Strategies," to reduce greenhouse gas emissions from the transportation sector by promoting denser development and alternatives to driving. The current Sustainable Communities Strategy for the Bay Area is *Plan Bay Area 2040*, was adopted by the Metropolitan Transportation Commission and the Association of Bay Area Governments in July of 2017.

The Air District supports these statewide goals through action at the regional level. The Air District has committed to reducing the Bay Area's regional greenhouse gas emissions to 80 percent below 1990 levels by 2050, as noted above. The Air District has also committed to a broad suite of specific measures to address greenhouse gases in the 2017 Clean Air Plan, *Spare the Air, Cool the Climate*. That document lays out the Air District's vision for what the Bay Area may look like in a post-carbon year 2050 and describes policies and actions that the region needs to take in the near- to mid-term to achieves these goals.

At the federal level, the United States has joined the international community in signing on to the Paris Climate Agreement and its commitment to limit global temperature increases to well under 2°C. The United States has committed under the Paris Agreement to reducing its greenhouse gases by 26-28 percent by 2025. The U.S. EPA has adopted a number of regulatory measures to address greenhouse gas emissions in support of this goal, including emissions standards for cars and light duty trucks and the "Clean Power Plan" regulations setting caps on each state's emissions from the power generation sector. The U.S. EPA has also extended the federal New Source Review requirements to greenhouse gases, requiring that major stationary sources use the "Best Available Control Technology" to limit their greenhouse gas emissions. The current administration has signaled that it will back off on these initiatives, however. If that occurs, it will place even more

emphasis on California, and on regions like the Bay Area, to take the lead in addressing climate change.

Significance Criteria

The most recently available BAAQMD draft CEQA guidelines established GHG thresholds for specific projects, general plans, and regional plans. An air quality rule does not fall neatly into any of these categories. Air quality rules are typically regional in nature, as opposed to general plans, community plans and regional plans. In addition, air quality rules are usually specific to particular source types and particular pollutants.

The BAAQMD draft CEQA Guidelines (BAAQMD, 2010) established a GHG threshold for air quality plans of "no net increase in emissions," which is appropriate for air quality plans because they include a mix of control measures with individual trade-offs. For example, one control measure may result in combustion of methane to reduce greenhouse gas emissions, while increasing criteria pollutant emissions by a small amount. Those increases from the methane measure would be offset by decreases from other measures focused on reducing criteria pollutants. In a particular rule development effort, there may not be opportunities to make these trade-offs.

The project level GHG threshold for stationary source projects is 10,000 metric tons of carbon dioxide equivalent (CO_2eq) emissions under the BAAQMD draft CEQA Guidelines. This threshold is expected to capture approximately 95 percent of all GHG emissions from new permit applications from stationary sources within the jurisdiction of the Air District. The threshold level was calculated as an average of the combined CO_2 emissions from all stationary source permit applications submitted to the Air District during the three-year analysis period (BAAQMD, 2010). The project-level GHG significance thresholds of 10,000 MT CO_2eq will be used to evaluate the cumulative GHG impacts.

Discussion of Impacts

VII a. Combustion of conventional hydrocarbon fuel results in the release of energy as bonds between carbon and hydrogen are broken and reformed with oxygen to create water vapor and carbon dioxide (CO_2). CO_2 is not a pollutant that occurs in relatively low concentrations as a by-product of the combustion process; CO_2 is a necessary combustion product of any fuel containing carbon. Therefore, attempts to reduce emissions of greenhouse gases from combustion focus on increasing energy efficiency – consuming less fuel to provide the same useful energy output.

The analysis of greenhouse gas emissions is a different analysis than for criteria pollutants for the following reasons. For criteria pollutant, significance thresholds are based on daily emissions because attainment or non-attainment is typically based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects to human health, e.g., one-hour and eight-hour. Using the half-life of CO_2, 100 years for example, the effects of greenhouse gases are longer-term, affecting the global climate over a relatively long timeframe. Greenhouse gases do not have human health effects like criteria pollutants. Rather, it is the increased accumulation of greenhouse gases in the atmosphere that may result in global climate change. Due to the complexity of conditions and interactions

affecting global climate change, it is not possible to predict the specific impact, if any, attributable to greenhouse gas emissions associated with a single project. Furthermore, the greenhouse gas emissions associated with the proposed rule would be small relative to total global or even state-wide greenhouse gas emissions. Thus, the significance of potential impacts from greenhouse gas emissions related to the proposed project has been analyzed for long-term operations on a cumulative basis, as discussed below.

The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Windscreens, enclosures, shrouds and mist/fog systems may be constructed at bulk material storage and handling facilities (e.g., petroleum coke and coal facilities) which are located within industrial areas.

Construction would likely require a couple of medium-duty truck trips to deliver equipment, a construction crew of three to ten workers, and a few pieces of construction equipment (e.g., forklift, backhoe, loader, cement trucks, and hand tools). The construction of wind screens is expected to take approximately three weeks split between digging footings for the screens and constructing the screens on site. The Air District estimates that up to 73 facilities could install wind screens as a result of the proposed project. Thus, it is conservatively assumed that all 73 facilities will install wind screens. The increase in greenhouse gas emissions associated with construction activities at bulk handling facilities are summarized in Table 3-9. Detailed emission calculations are provided in Appendix A.

TABLE 3-9

Greenhouse Gas Emissions Increases Associated with the Implementation of Rules 6-1 and 6-6 (metric tons/yr)

Activity	**CO_2e**
Construction GHG Emissions (One Wind Screen)	11.98
Construction GHG Emissions (30 yr Amortized)	0.40
Emissions for 73 Wind Screens	29.20
Total	29.20
BAAQMD Significance Threshold	10,000
Significant?	**No**

The greenhouse gas emissions associated with the proposed rule and rule amendments are expected to be less than the greenhouse gas threshold and, therefore, less than significant. The proposed new rules and rule amendments are, therefore, not expected to make a cumulatively considerable contribution to the significant cumulative impact caused by greenhouse gas emissions. Thus, there will be no significant greenhouse gas impacts.

VII b. The proposed new rules and rule amendments will not conflict with any plans, policies, or regulations addressing climate change. As discussed above, applicable plans, policies and regulations are aimed at limiting global climate change to well under 2°C, and at reducing regional and state-wide emissions to 80 percent below 1990 levels by 2050 in order to achieve that goal.

The proposed new rules and rule amendments will not conflict with the Bay Area's progress towards achieving that emission reduction target. Further, the proposed project will not require affected facilities to make any substantial changes that would increase their greenhouse gas emissions, and they will not conflict with any regulatory efforts to achieve the state and regional greenhouse gas reduction goals under CARB's Scoping Plan, the District's 2017 Clean Air Plan, *Plan Bay Area 2040,* or any other local climate action plan.

Conclusion

Based upon these considerations, no significant adverse greenhouse gas impacts are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, 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 §65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and potions of western Solano and southern Sonoma Counties. Because the area of coverage is vast (approximately 5,600 square miles), land uses vary greatly and include commercial, industrial, residential, and agricultural uses.

Facilities and operations within the District handle and process substantial quantities of flammable materials and acutely toxic substances. Accidents involving these substances can result in worker or public exposure to fire, heat, blast from an explosion, or airborne exposure to hazardous substances.

Fires can expose the public or workers to heat. The heat decreases rapidly with distance from the flame and, therefore, poses a greater risk to workers at specific facilities where flammable materials and toxic substances are handled than to the public. Explosions can generate a shock wave, but the risks from explosion also decrease with distance. Airborne releases of hazardous materials may affect workers or the public, and the risks depend upon the location of the release, the hazards associated with the material, the winds at the time of the release, and the proximity of receptors.

For all facilities and operations handling flammable materials and toxic substances, risks to the public are reduced if there is a buffer zone between process or storage units and residences or if prevailing winds blow away from residences. Thus, the risks posed by operations at a given facility or operation are unique and determined by a variety of factors.

Hazards are related to the risks of fire, explosions, or releases of hazardous substances in the event of accident or upset conditions. Hazards are related to the production, use, storage, and transport of hazardous materials. Industrial production and processing facilities are potential sites for hazardous materials. Some facilities produce hazardous materials as their end product, while others use such materials as an input to their production processes. Examples of hazardous materials used by consumers include fuels, paints, paint thinner, nail polish, and solvents. Hazardous materials may be stored at facilities producing such materials and at facilities where hazardous materials are part of the production processes. Currently, hazardous materials are transported throughout the Bay Area in great quantities via all modes of transportation including rail, highway, water, air, and pipeline.

The potential hazards associated with handling such materials are a function of the materials being processed, processing systems, and procedures used to operate and maintain the facilities where they exist. 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 fires, vapor cloud explosions, thermal radiation, and explosion/overpressure.

Regulatory Background

There are many federal and state rules and regulations that facilities handling hazardous materials 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.

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 are documents prepared by the owner or operator of a stationary source containing detailed information including: (1) regulated substances held onsite at the stationary source; (2) offsite consequences of an accidental release of a regulated substance; (3) the accident history at the stationary source; (4) the emergency response program for the stationary source; (5) coordination with local emergency responders; (6) hazard review or process hazard analysis; (7) operating procedures at the stationary source; (8) training of the stationary source's personnel; (9) maintenance and mechanical integrity of the stationary source's physical plant; and (10) incident investigation. California is proposing modifications to the CalARP Program along with the state's PSM program in response to an accident at the Chevron Richmond Refinery. The proposed regulations were released for public comment on July 15, 2016 and the public comment period closed on September 15, 2016. After the close of the comment period a modified version of the proposed regulations was released in February 2017 and the public comment period for comments on the modifications closed on March 30, 2017. The final document was then filed with the Secretary of State in July 2017 and has gone into effect as of October 1, 2017.

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 business 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 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 considers human factors as part of process hazards analyses, incident investigations, training, and operating procedures, among others.

Significance Criteria

The proposed project impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion of Impacts

VIII a - b. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Windscreens, enclosures, shrouds and mist/fog systems may be constructed at bulk material storage and handling facilities (e.g., petroleum coke and coal facilities) which are located within industrial areas. Construction of pollution control equipment as a result of the proposed project is expected to occur in industrial areas. Construction of wind screens, enclosures, shrouds, or water mist/fog systems would not introduce any new hazards or require the use of hazardous materials during either construction or operational activities.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures or the use of hazardous materials. Trackout prevention at construction sites is currently required as part of SWPPP requirements. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have impacts on hazards and hazardous materials, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no impacts on hazards or hazardous materials.

Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

- Types of hazardous materials used and their locations;
- Training programs for employees including safe handling of hazardous materials and emergency response procedures and resources.
- Procedures for emergency response notification;
- Proper use of emergency equipment;
- Procedures to mitigate a release or threatened release of hazardous materials and measures to minimize potential harm or damage to individuals, property, or the environment; and
- Evacuation plans and procedures.

Hazardous materials at existing facilities would continue to be used in compliance with established OSHA or Cal/OSHA regulations and procedures, including providing adequate ventilation, using recommended personal protective equipment and clothing, posting appropriate signs and warnings, and providing adequate worker health and safety training. The exposure of employees is regulated by Cal-OSHA in Title 8 of the CCR. Specifically, 8 CCR 5155 establishes permissible exposure levels (PELs) and short-term exposure levels (STELs) for various chemicals. These requirements apply to all employees. The PELs and STELs establish levels below which no adverse health effects are expected. These requirements protect the health and safety of the workers, as well as the nearby population including sensitive receptors.

In general, all local jurisdictions and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response

plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area.

The above regulations provide comprehensive measures to reduce hazards of explosive or otherwise hazardous materials. Compliance with these and other federal, state and local regulations and proper operation and maintenance of equipment should ensure the potential for explosions or accidental releases of hazardous materials is not significant. Therefore, the proposed new rules and rule amendments are not expected to create a significant hazard to the public or environment.

VIII c. Schools may be located within a quarter mile of commercial, industrial or institutional facilities affected by the proposed new Rule 6-6 and amendments to Rule 6-1. It would be expected that these facilities are taking the appropriate and required actions to ensure proper handling of hazardous materials, substances or wastes near school sites. The proposed new rules and rule amendments would not result in the construction or operation of additional equipment or result in modifications to existing equipment, that would generate hazardous emissions, or result in the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. Therefore, no increase in hazardous emissions from implementation of the proposed new rules and rule amendments would be expected.

VIII d. Government Code §65962.5 requires creation of lists of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits or site cleanup activities. It is not known if the affected commercial, industrial, and institutional facilities are located on the hazardous materials sites list pursuant to Government Code §65962.5. However, the rule amendments and proposed new rules are expected to increase the control of fugitive dust emissions and would not interfere with site cleanup activities or create additional site contamination, and would not be expected to create a significant hazard to the public or environment.

VIII e-f. The proposed project would not result in a safety hazard for people residing or working within two miles of a public airport or air strip. No impacts on airports or airport land use plans are anticipated from the proposed new rules and rule amendments, which are expected to increase the control of fugitive dust emissions. Modifications are expected to be confined to the existing commercial, industrial and institutional land uses. Therefore, no significant adverse impacts on an airport land use plan or on a private air strip are expected.

VIII g-h. Facilities affected by the proposed new rules and rule amendments may be adjacent to wildlands. The proposed new rules and rule amendments are not expected to generate additional development that would place structures closer to wildland areas. It is expected that facilities adjacent to wildland areas take appropriate and required actions to protect their property from wildland fires. The proposed new rules and rule amendments would not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees, nor would it increase fire risk by increasing the use of flammable materials. The proposed new rules and rule amendments are not expected to expose people or structures to wild fires. Therefore, no significant increase in fire hazards is expected due to the proposed new rules and rule amendments.

Conclusion

Based upon these considerations, no significant adverse hazards and hazardous materials impacts are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. 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 on- or off-site?	☐	☐	☐	☑
d)	Substantially alter the existing drainage pattern of the site or area, including through the 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). Reservoirs and drainage streams are located throughout the area within the BAAQMD's jurisdiction, and discharge into the Bays. Marshlands incised with numerous winding tidal channels containing brackish water are located throughout the Bay Area.

The San Francisco Bay estuary system is one of the largest in the country and drains approximately 40 percent of California. Water from the Sacramento and San Joaquin Rivers of the Central Valley flow into what is known as the Delta region, then into the sub-bays, Suisun Bay and San Pablo Bay, and finally into the Central Bay and out the Golden Gate. The Delta is a large triangle of interconnected sloughs and agricultural "islands" that forms a key link in California's water delivery system. Some of the fresh water flows through the Delta and into Bay, but much is diverted from the Bay. Nearly half of the surface water in California starts as rain or snow that falls within the watershed and flows downstream toward the Bay. Much of the water flowing toward the Bay is diverted for agricultural, residential, and industrial purposes as well as delivery to cities of southern California as part of state and federal water projects (ABAG, 2013).

The two major drainages, the Sacramento and San Joaquin Rivers receive more than 90 percent of runoff during the winter and spring months from rainstorms and snow melt. San Francisco Bay encompasses approximately 1,600 square miles and is surrounded by the nine Bay Area counties of which seven border the Bay. Other surface waters flow either directly to the Bay or Pacific Ocean. The drainage basin that contributes surface water flows directly to the Bay covers a total area of 3,464 square miles. The largest watersheds include Alameda Creek (695 square miles), the Napa River (417 square miles), and Coyote Creek (353 square miles) watersheds. The San Francisco Bay estuary includes deep-water channels, tidelands, and marshlands that provide a variety of habitats for plants and animals. The salinity of the water varies widely as the landward flows of saline water and the seaward flows of fresh water converge near the Benicia Bridge. The salinity levels in the Central Bay can vary from near oceanic levels to one quarter as much, depending on the volume of freshwater runoff (ABAG 2013).

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 Regional Water Quality Control Board 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, which have been updated in 2005 as the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. 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 parts, including Carquinez Strait and Suisun Bay, fall 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 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.

Significance Criteria

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 263,000 gallons per day of potable water.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Discussion of Impacts

IX a. and f. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Windscreens, enclosures, shrouds, and water mist/fog systems may be constructed at bulk material storage and handling facilities (e.g., petroleum coke and coal facilities) which are located within industrial areas. The construction and operation of windscreens, enclosures, or shrouds do not require the use of water and are not expected to result in any increase in wastewater.

Water mist and fog systems are effective at reducing dust. Rather than spraying significant volumes of water, fog and mist systems create small water droplets that are more effective at contacting small dust particles than water spray systems. Estimates of water fog and water spray systems indicate that they are 10-20 times more effective at reducing fugitive dust per gallon of water. Water mist and fog systems produce very small water droplets that come into contact with dust particles. Because the water use is in a very fine mist/fog, the amount of water use is reduced, as compared to a water spray, such that the application of water is minimal and no water runoff is expected.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures and are not expected to significantly add to water consumption or degrade water quality. Trackout prevention at construction sites is currently required as part of SWPPP and water use is minimized by recycling water in truck wash stations. Construction activities associated with new development would be

better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Better enforcement of the SWPPP requirements is expected to minimize track out of soil/dust and other materials that could potentially be discharged to water bodies as part of surface water runoff, providing a beneficial impact to water quality. Therefore, new Rule 6-6 is expected to help minimize water quality impacts associated with water runoff. Development that may be subject to this rule may have impacts on hydrology and water quality, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no impacts on hydrology and water quality. Therefore, the proposed project is not expected to result in an increase in wastewater discharge, would not be expected to result in water quality impacts, and would not result in the degradation of surface water. The proposed project is not expected to result in any modifications to NPDES permits or result in violation of NPDES permits. Further, the proposed project would not result in an increase in wastewater that requires treatment and would not impact any wastewater treatment facility.

IX b. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Emission control equipment is expected to include windscreens, enclosures, shrouds, and water mist/fog systems. Trackout prevention at construction sites is currently required as part of SWPPP and water use is minimized by recycling water in truck wash stations. Thus, water demand impacts are limited to the use of water mist and fog systems.

Installation of windscreens, enclosures, shrouds and water mist/fog systems are not expected to require extensive construction activities. No grading or extensive site preparation is expected to be required to construct foundations, for example. Site preparation is expected to be limited to the construction of footings for windscreens/enclosures so that the plots would be very small in area, thus, requiring little or no water for fugitive dust control. Therefore, little or no water for dust suppression purposes is expected to be needed for construction activities under the proposed new rules and rule amendments.

The amendments to Rule 6-1 are expected to result in the construction and operation of water mist and fog systems. The water requirements for these systems are summarized in Table 3-10. Up to five water fog systems are expected to be installed and each of these water fog systems is anticipated to use an average of 1,710 gallons per day, totaling 8,550 gallons of incremental daily water use. Thirty-four water mist systems are expected to be installed. Each of these water mist systems is anticipated to use 855 gallons per day, totaling 29,070 gallons of incremental daily water use. Total incremental water use for the proposed wind screens, and judicious use of water is 37,620 gallons per day. It is conservatively estimated that all five of these water fog systems are installed to meet the requirements of the amendments to Rule 6-1.

The proposed project would be considered significant if it exceeded the CEQA threshold of 263,000 gallons or more of potable water per day. Since the proposed project is expected to use approximately 37,620 gallons per day, the proposed project will not significantly alter water demand or interfere with groundwater recharge or cause any notable change in the groundwater table level.

TABLE 3-10

Potential Water Demand Impacts Associated with Amendments to Rule 6-1, Proposed New Regulation 6 and Proposed New Rule 6-6

ACTIVITY	POTENTIAL WATER USE (gpd)
1 Water Fog System	1,710
5 Water Fog Systems	8,550
1 Water Mist System	855
34 Water Mist Systems	29,070
TOTAL WATER USE	37,620
Significance Threshold	263,000
SIGNIFICANT?	**No**

IX c, d, and e. The proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1 are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. The proposed project does not have the potential to substantially increase the area subject to runoff since construction will be minor in scope and limited to existing facilities in industrial areas. The construction of windscreens, enclosures, shrouds, and water mist/fog systems are not expected to result in a substantial increase in impervious surfaces that would result in an increase in water runoff. Additionally, facilities and major construction sites are typically expected to develop a SWPPP to address storm water impacts. The proposed project is also not expected to alter the existing drainage or drainage patterns, 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 as there will be no significant water use. Therefore, no significant adverse impacts to storm water runoff or existing drainage patterns are expected as a result of the proposed project.

IX g, h, i, and j. The proposed project does not include the construction of new or relocation of existing housing or other types of facilities and, as such, would not require the placement of housing or other structures within a 100-year flood hazard area. (See also XIII "Population and Housing"). Any construction activities associated with the proposed project would occur within the confines of existing facilities and as a result, the proposed project would not be expected to create or substantially increase risks from flooding; expose people or structures to significant risk of loss, injury or death involving flooding; or increase existing risks, if any, of inundation by seiche, tsunami, or mudflow.

Conclusion

Based upon these considerations, no significant adverse impacts to hydrology and water quality are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X.	**LAND USE AND PLANNING.** Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☑
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to 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 amendments to Regulation 6 will affect stationary sources with fugitive PM emissions in the Bay Area. Some of these sources are located in industrial areas (e.g., bulk material storage and handling facilities). Large disturbed surface sites (e.g., landfills) would also tend to be located within industrial areas. Large construction sites that would be affected by Rule 6-6 and required to prevent trackout onto paved roadways could be located in various land uses 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.

Significance Criteria

The proposed project impacts will be considered significant on land use and planning if the project conflicts with the land use and zoning designations established by local jurisdictions, or any applicable habitat conservation or natural community conservation plan.

Discussion of Impacts

X a-c. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Windscreens, enclosures, shrouds, and water mist/fog systems may be constructed at bulk handling facilities, which are located within industrial areas. Construction of air pollution control equipment as a result of the proposed project are expected to occur in industrial areas and are thus not expected to affect land use and planning.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPP requirements. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have land use impacts, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no land use impacts.

Construction associated with the proposed project are expected to be limited to windscreens, enclosures, shrouds, and water mist/fog systems at bulk material storage and handling facilities. All construction would take place at already existing facilities that have been previously graded. Thus, the proposed project would not result in impacts that would physically divide an established community.

The proposed project is expected to primarily affect industrial areas. Land uses surrounding industrial areas can vary considerably and include industrial areas, commercial areas, open space, and residential areas. The General Plans and land use plans for areas with industrial land uses, such as Contra Costa County, allow for and encourage the continued use of industrial areas within their respective communities. Some of the General Plans encourage the modernization of existing industrial areas. The proposed project is not expected to conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project because any new equipment would be located within the confines of existing industrial or commercial facilities. The jurisdictions with land use approval recognize and support the continued use of industrial facilities. The proposed new rules and rule amendments would not interfere with those policies or objectives.

Conclusion

Based upon these considerations, no significant adverse land use impacts are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES.** Would the project:				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☑

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.

Regulatory Background

Mineral resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

Significance Criteria

The proposed project impacts on mineral resources will be considered significant if:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion of Impacts

XI a-b. The proposed amendments to Rule 6-1, new Regulation 6 and new Rule 6-6 are not associated with 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. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from

industrial sources, disturbed sites, and construction sites. Modifications may be required to install windscreens, enclosures, shrouds, and water mist/fog systems at bulk handling facilities, which are located within industrial areas. Construction of air pollution control equipment as a result of the proposed project is not expected to affect mineral resources.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPP requirements. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements.

Construction and operation of new equipment associated with proposed Rule 6-6 and amendments to Rule 6-1 are not expected to resource mineral resources that are of value to the region or result in the loss of a locally important mineral resource site. Thus, no significant adverse impacts to mineral resources are expected.

Conclusion

Based upon these considerations, no significant adverse impacts to mineral resources are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII.	**NOISE.** Would the project result in:				
a)	Exposure of 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)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
f)	For a project within the vicinity of a private airstrip would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

Setting

The ambient noise environment in the Bay Area is defined by a wide variety of noise sources, with the predominant noise source being traffic. Traffic noise exposure is primarily a function of the volume of vehicles per day, the speed of those vehicles, the number of those vehicles represented by medium and heavy trucks, the distribution of those vehicles during daytime and nighttime hours, and the proximity of noise-sensitive receivers to the roadway. Existing traffic noise exposure is expected to be as low as 50 dB Ldn in the most isolated and less frequented locations of the Bay Area, while receivers adjacent to interstates are likely to experience levels as high as 75 dB Ldn (FTA, 2006). Bus transit also contributes to roadway noise levels. In San Francisco, a large portion of the transit bus fleet is electrified and, consequently, the contribution of bus transit to localized roadway noise levels is decreased (ABAG, 2013).

The Bay Area is also presently affected by noise from freight and passenger rail operations. While these operations generate significant noise levels in the immediate vicinity of the railways, train operations are intermittent and area railways are widely dispersed. Commuter rail such as San Francisco Muni Metro and Santa Clara Valley Transportation Authority (VTA) operate with more frequency than standard gauge rail operations but lower speeds resulting in lower noise levels. Bay Area Rapid Transit (BART) operations, on the other hand, can attain higher speeds and have the potential for greater noise levels along extended stretches. The contribution of rail noise to the overall ambient noise environment in the Bay Area is relatively minor compared to other sources such as vehicle traffic. Train operations may be a source of significant ground borne vibration near the tracks. Vibration sensitive receivers within 100 feet of rail operations may be adversely affected by vibration exposure during train events (ABAG, 2013).

The Bay Area is home to many airports—including public use, private use, and military facilities. Major airports include San Francisco International, Oakland International and Norman Y. Mineta San José International. In addition to the numerous daily aircraft operations originating and terminating at these facilities, aircraft not utilizing these airports frequently fly over the Bay Area. All of these operations contribute to the overall ambient noise environment. In general, like rail noise, the proximity of the receiver to the airport and aircraft flight path determines the noise exposure. Other contributing factors include the type of aircraft operated, altitude of the aircraft, and atmospheric conditions. Atmospheric conditions may contribute to the direction of aircraft operations (flow) and affect aircraft noise propagation (ABAG, 2013).

A wide variety of industrial and other non-transportation noise sources are located within the Bay Area. These include manufacturing plants, landfills, treatment plants (e.g., water), power generation facilities, food packaging plants, lumber mills, and aggregate mining facilities, just to name a few. Noise generated by these sources varies widely, but in many cases may be a significant if not dominant contributor to the noise environment in a specific community.

Regulatory Background

Noise levels related to construction and operation activities are addressed in local General Plan policies and local noise ordinance standards. The General Plans 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.

Significance Criteria

The proposed project impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise ordinance is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion of Impacts

XII a, c, and d. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required to install windscreens, enclosures, shrouds, and water mist/fog systems at bulk handling facilities, which are located within industrial areas.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPP requirements. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have noise impacts, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no noise impacts.

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. No new major industrial equipment is expected to be required to be installed due to the proposed project. Equipment such as windscreens, enclosures, shrouds, and water mist/fog systems are not major sources of noise and produce little to no noise impacts. Therefore, no noise impacts associated with the operation of the proposed project are expected. Air pollution control equipment is not generally a major noise source. Further, all noise producing equipment must comply with local noise ordnances and applicable OSHA and Cal/OSHA noise requirements. Therefore, industrial operations affected by the proposed new rules are not expected to have a significant adverse effect on local noise control laws or ordinances.

Construction activities associated with the proposed project may generate some noise associated with temporary construction equipment and construction-related traffic. Construction would likely require some truck trips to deliver equipment, a construction crew of up to about 10 workers, and a few pieces of construction equipment (e.g., forklift, welders, backhoes, cranes, and generators). All construction activities would be temporary and are expected to occur within the confines of existing commercial or industrial facilities so that no significant increase in noise during construction activities is expected.

XII b. The proposed project is not expected to generate or expose people to excessive ground borne vibration or ground borne noise. No large construction equipment that would generate

substantial noise or vibration (e.g., backhoes, graders, jackhammers, etc.), no new industrial equipment, and no increase in traffic is expected to be generated.

Construction activities could include the use of small backhoes to develop footings for windscreens or enclosures but no large equipment that would generate substantial vibration or noise is expected to be required. Further, construction activities are expected to be limited to within about a three-week period and occur during the daylight hours, in compliance with local noise standards and ordinances. Therefore, the proposed project is not expected to generate excessive ground borne vibration or noise.

XII e-f. It is not known if the existing commercial or industrial sites affected by the proposed project are located within existing airport land use plans. The addition of new or modification of existing windscreen, enclosures, shrouds, and water mist/fog systems would not expose people residing or working in the project area to excessive noise levels associated with airports, as this type of equipment is not typically noise generating equipment. The proposed project would not locate residents or commercial buildings or other sensitive noise sources closer to airport operations. As noted in the previous item, there are no components of the proposed project that would substantially increase ambient noise levels, either intermittently or permanently.

Conclusion

Based upon these considerations, no significant adverse noise impacts are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII.	**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 vary greatly and include commercial, industrial, residential, agricultural, and open space uses. The amendments to Rule 6-1 would apply to facilities which are located within commercial or industrial areas in the Bay Area.

According to the Association of Bay Area Governments (ABAG), population in the Bay Area is currently about 7.2 million people and is expected to grow to about 9.3 million people by 2040 (ABAG, 2013). Two major demographic changes shape the forecast of household and job growth: the increase in the senior population and the increase in Latino and Asian populations. These demographic changes lead to three major trends in the regional growth by 2040:

- Increase in group houses. The increase in the senior population results in an increase in the amount of resident care facilities. More than 66,000 additional group housing residents are forecasted by 2040.
- Decline in labor force participation: The overall labor force participation rate declines given the increase in the senior population, even taking into account increases in the percentage of people working beyond the age of 65. By 2040, it is estimated that 49.8 out of 100 people will be employed or looking for work, compared to 51.6 in 2010.
- Increase in household size. The number of people per household is expected to increase from 2.69 in 2010 to 2.75 in 2040 as a result of the increase in the Latino and Asian populations, as well as the number of multi-generational households.

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.

Significance Criteria

The proposed project impacts on population and housing will be considered significant if:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion of Impacts

XIII a). The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required to install windscreens, enclosures, shrouds, and water mist/fog systems at bulk handling facilities, which are located within industrial areas.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPP requirements. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have impacts on population and housing, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no impacts on population and housing.

It is expected that the existing labor pool would accommodate the labor requirements for the construction of new or modified equipment at the facilities, as the existing labor pool in the Bay Area can accommodate the estimated 10 construction workers per facility. In addition, it is not expected that the affected facilities would need to hire additional permanent personnel to implement the proposed rule of operate the new equipment. As such, adopting the proposed project is not expected to induce substantial population growth.

XIII b and c). As discussed previously, the proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Construction associated with the proposed project is expected to be limited to windscreens, enclosures, shrouds, and water mist/fog systems at bulk material storage and handling facilities. All construction would take place at existing facilities that have been previously graded. The implementation of the proposed new rules and rule amendments is not expected to result in the creation of any industry/business 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.

Conclusion

Based upon these considerations, no significant adverse impacts to population and housing are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. 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 vary greatly and include commercial, industrial, residential, agricultural, and open space uses. Amendments to Regulation 6 would generally apply to facilities which are located within commercial or industrial areas in the District.

Given the large area covered by the BAAQMD, public services are provided by a wide variety of local agencies. Fire protection services are managed at the local level, typically by municipalities, counties, fire protection districts, or volunteer fire companies. California Government Code §38611 states that any city organized under general law must establish a fire department unless it is included within the boundaries of an established fire protection district. State and federal lands are generally served by State and federal fire agencies, e.g., CALFIRE and National Park Service. In some cases, businesses and native tribes manage their own fire departments. Each fire protection agency is responsible for serving its own prescribed area, but mutual aid agreements are in wide use across the region such that agencies can rely on assistance from neighboring agencies in the case of overwhelming demand (ABAG, 2013).

Police services are provided on the State, county, and local levels. Police services provide law enforcement in crime prevention, traffic and congestion control, safety management, emergency response, and homeland security. The California Highway Patrol (CHP) is responsible for police protection along the interstate highway systems and provides services for traffic management, emergency response, and protection of the highway system. Each county in the Bay Area has its

own sheriff's department responsible for police protection in unincorporated areas of each county. Each incorporated city and town has a police department responsible for police protection within its own jurisdiction (ABAG, 2013).

Although the California public school system is under the policy direction of the Legislature, the California Department of Education relies on local control for the management of school districts. School district governing boards and district administrators allocate resources among the schools of the district and set education priorities for their schools. Each jurisdiction in the Bay Area provides residents with local public education facilities and services, including elementary, middle, secondary, and post-secondary schools, as well as special and adult education (ABAG, 20130).

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.

Significance Criteria

The proposed project impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion of Impacts

XIV a. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required to install windscreens, enclosures, shrouds, and water mist/fog systems at bulk handling facilities, which are located within industrial areas.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPP requirements. Construction activities

associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have impacts on public services, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no impacts on public services.

Construction associated with the proposed project is expected to be limited to windscreens, enclosures, shrouds, and water mist/fog systems at bulk material storage and handling facilities. All construction would take place at existing facilities for which public services are currently provided. Based on the above, no additional fire or police protection services would be required due to the proposed amendments to Rule 6-1.

As noted in the "Population and Housing" discussion above, the proposed project is not expected to induce population growth because the existing local labor pool (e.g., workforce) is expected to be sufficient to accommodate the expected construction work force of up to 10 workers per facility. No increase in permanent workers is expected to be required to operate the equipment associated with the proposed project. Therefore, there will be no increase in local population and thus no impacts are expected to local schools or parks.

The proposed project would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. The facilities affected by the proposed project are existing facilities for which public services are already required and no increase in the need for such services is expected. There will be no increase in population as a result of the adoption of the proposed new rules and rule amendments, therefore, no need for physically altered government facilities.

Conclusion

Based upon these considerations, no significant adverse impacts to public services are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☑

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and potions of western Solano and southern Sonoma Counties. Because the area of coverage is vast (approximately 5,600 square miles), land uses vary greatly and include commercial, industrial, residential, and agricultural uses. The amendments to Rule 6-1, new Regulation 6 and new Rule 6-6 would apply to facilities which are generally located within commercial or industrial or institutional areas within the District.

The Bay Area contains over one million acres of parks and open space areas. Approximately 147,000 acres of new parkland were added to the regional's open space inventory between 2002 and 2011, representing a 26 percent increase. Additionally, approximately 200,000 acres of privately owned land are held in permanent reserve as of 2011. While access by the general public to these reserve areas is restricted, they are important for the preservation of wildlife habitats and the protection of the environment (ABAG, 2013).

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.

Significance Criteria

The proposed project impacts on recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion of Impacts

XV a-b. As discussed under "Land Use" above, there are no provisions in the amendments to Rule 6-1, new Regulation 6 or new Rule 6-6 affecting 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 new rules and rule amendments. Construction associated with the proposed project is expected to be limited to windscreens, enclosures, shrouds, and water mist/fog systems at bulk material storage and handling facilities that may require up to 10 construction workers each. Further, no increase in permanent workers is expected. All construction would take place at existing facilities that have been previously graded. Thus, there would be no impacts on recreation facilities.

The proposed project would not increase or redistribute population and, therefore, would not increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or the expansion of existing recreational facilities. Therefore, adoption of the proposed new rules and rule amendments is not expected to have any significant adverse impacts on recreation.

Conclusion

Based upon these considerations, no significant adverse recreation impacts are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☑
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☑
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d) Substantially increase hazards 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) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such 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). 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 currently contains over 1,300 directional miles of limited-access highways, which include both interstates and state highways. In addition, the Bay Area has over 33,000 directional miles of arterials and local streets, providing more localized access to individual communities. Together, these roadway facilities accommodate nearly 17 million vehicle trips a day. There are over 11,500 transit route miles of service including heavy rail (BART), light rail (Muni Metro and VTA Light Rail), commuter rail (Caltrain and Alameda Commuter Express or ACE), 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 2010. The portion of commuters that carpool was about 11 percent in 2010, while an additional 10 percent utilize public transit. About 3 percent of commuters walked to work in 2010. In addition, other modes of travel (bicycle, motorcycle, etc.), account for three percent of commuters in 2010 (ABAG, 2013). Cars, buses, and commercial vehicles travel about 149 million miles a day (2010) on the Bay Area freeways and local roads. Transit serves about 1.6 million riders on the average weekday (ABAG, 2013).

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 cross 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. 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 state and county level. Planning for interstate highways is generally done by the California Department of Transportation.

Most local counties maintain a transportation agency that has the duties of transportation planning and administration of improvement projects within the county and implements the Transportation Improvement and Growth Management Program, and the congestion management plans (CMPs). The CMP identifies a system of state highways and regionally significant principal arterials and specifies level of service standards for those roadways.

Significance Criteria

The proposed project impacts on transportation and traffic will be considered significant if:

- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.

Discussion of Impacts

XVI a and b. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required to install windscreens, enclosures, shrouds, and water mist/fog systems at bulk handling facilities, which are located within industrial areas. The proposed amendments to rule 6-1 could result in traffic during the construction period of about 10 workers and one or two delivery trucks. No increase in permanent workers of truck traffic is expected following the construction period.

Proposed new Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. These measures would not require the construction of new structures. Trackout prevention at construction sites is currently required as part of SWPPP requirements. Construction activities associated with new development would be better regulated under Rule 6-6; however, the requirements to prevent trackout currently exist as part of the SWPPP requirements. Development that may be subject to this rule may have impacts on transportation and traffic, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no impacts on transportation and traffic.

No increase in employees or additional delivery trucks would be expected as a result of the proposed project following the construction period. Therefore, the proposed new Rule 6-6 and amendments to Rule 6-1 are not expected to conflict with any traffic plans (including congestion management plans), ordinances or policies.

XVI c. The proposed new rules and rule amendments are not expected to involve the delivery of materials via air so no increase in air traffic is expected. Construction associated with the proposed project is expected to be limited to windscreens, enclosures, shrouds, and water mist/fog systems at bulk material storage and handling facilities. All construction would take place at existing industrial facilities. Therefore, the proposed project would not result in a change in air traffic patterns or result in a change in location that results in substantial safety risks.

XVI d - e. The proposed new rules and rule amendments would not increase traffic hazards or create incompatible uses. The proposed new rules and rule amendments do not involve construction of any roadways or other transportation design features, so no changes to current roadway designs that would increase traffic hazards are expected. Emergency access at commercial or industrial facilities affected by the proposed new rules and rule amendments is not expected to be impacted by the proposed project, as no modifications that effect traffic or access are expected to be required because of the proposed project. The proposed new rules and rule amendments are not expected to increase vehicle trips or 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.

XVI f) The proposed new rules and rule amendments are not expected to affect the performance of mass transit or non-motorized travel to street, highways and freeways, pedestrian or bicycle paths as construction associated with the proposed project is expected to be limited to windscreens, enclosures, shrouds, and water mist/fog systems at bulk material storage and handling facilities. The proposed amendments to rule 6-1 could result in traffic during the construction period of about 10 workers and one or two delivery trucks. No increase in permanent workers of truck traffic is expected following the construction period. Therefore, the proposed new rules and rule amendments would not conflict with any congestion management programs, result in changes to level of service at intersections, increase travel demand, impact public transit, or impact bicycle or pedestrian safety. No changes are expected to parking capacity at or in the vicinity of affected facilities as the proposed new rules and rule amendments are not expected to require additional employees or truck/delivery trucks. Therefore, no impacts resulting in changes to traffic patterns or adopted traffic plans or programs are expected.

Conclusion

Based upon these considerations, no significant adverse impacts to transportation and traffic are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVII. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resourced Code section 5020.1(k), or	☐	☐	☐	☑
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.?	☐	☐	☐	☑

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 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 centuries given their abundant natural resources and moderate climate. The arrival of Native Americans into the Bay Area is associated with documented cultural resources from about 5,500 years ago (ABAG, 2013).

Six different groups of Native American population, identified by their language, lived within the Bay Area, including Costanoan, Eastern Miwok, Patwin, Coast Miwok, Pomo, and Wappo. Native villages and campsites were inhabited on a temporary basis and are found in several ecological niches due to the seasonal nature of their subsistence base. Remains of these early populations indicate that main villages, seldom more than 1,000 residents, were usually established along water courses and drainages. By the late 1760s, about 300,000 Native Americans lived in California (ABAG, 2013).

Regulatory Background

The State CEQA Guidelines were amended in July 2015 to include evaluation of impacts on tribal cultural resources. Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe (Public Resources Code 21074).

Significance Criteria

The proposed project impacts to tribal resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of tribal cultural significance to a community or ethnic or social group or a California Native American tribe.
- Unique objects with cultural value to a California Native American tribe are present that could be disturbed by construction of the proposed project.

Discussion of Impacts

XVII a). As discussed in Section V, Cultural Resources, resources (buildings, structures, equipment) that are less than 50 years old are excluded from listing in the National Register of Historic Places unless they can be shown to be exceptionally important. The proposed new rules and rule amendments affect bulk handling and storage equipment at commercial and industrial facilities and prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites, and sites with large disturbed surfaces. Some affected facilities may have equipment older than 50 years. However, such equipment does not typically meet the criteria identified in CEQA Guidelines §15064.5(a)(3), are not listed or eligible for listing in the California Register of Historic Resources or a local register of historical resources (Public Resources Code Section 5020.1(k), and are not considered to have cultural value to a California Native American tribe. Further, construction associated with the proposed project is expected to be limited to windscreens, enclosures, shrouds, and water mist/fog systems at bulk material storage and handling facilities. All construction would take place at existing facilities that have been previously graded. Because construction will be limited to facilities that have been graded, the proposed new rules and rule amendments are not expected to require physical changes to a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American Tribe. Furthermore, the proposed new rules and rule amendments are not expected to

result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources.

As part of releasing this CEQA document for public review and comment, the document is circulated to the State Clearinghouse that provides notice of the proposed project to all California Native American Tribes that requested to be on the Native American Heritage Commission's (NAHC) notification list per Public Resources Code § 21080.3.1(b)(1). The NAHC notification list provides a 30-day period during which a Native American Tribes may respond to the notice, in writing, requesting consultation on the proposed new rules and rule amendments.

Since construction activities will be limited to existing facilities, the proposed new rules and rule amendments are not expected to affect historical or tribal resources as defined in Public Resources Section 5020.1(k), or 5024.1. Therefore, no impacts to tribal resources are anticipated to occur as a result of the proposed new rules and rule amendments.

Conclusion

Based upon these considerations, no significant adverse impacts to tribal resources are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVIII.	**UTILITIES/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 be 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

Given the large area covered by the BAAQMD, public utilities are provided by a wide variety of local agencies. Most industrial facilities have wastewater and storm water treatment facilities and discharge treated wastewater under the requirements of National Pollutant Discharge Elimination System (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 facilities, which is not recycled off-site, is required to be disposed of at a licensed 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.

City and/or County General Plans usually contain goals and policies to assure adequate utilities and service systems are maintained within the local jurisdiction.

Significance Criteria

The proposed project impacts on utilities/service systems will be considered significant if:

- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- An increase in demand for utilities impacts the current capacities of the electric utilities.
- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.
- The project increases demand for water by more than 263,000 gallons per day.
- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion of Impacts

XVIII a and e). The potential water use and wastewater impacts associated with implementation of the proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1were discussed under Hydrology and Water Quality (see Section IX a.). The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required to install windscreens, enclosures, shrouds, and water mist/fog systems at bulk handling facilities, which are located within industrial areas. Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. Water mist and fog systems produce very small water droplets that come into contact with dust particles. Because the water use is in a very fine mist/fog, the amount of water use is reduced, as compared to a water spray system, such that the application of water is minimal and no water runoff or wastewater discharge is expected.

XVIII b and d). Construction associated with the proposed project is expected to be limited to windscreens, enclosures, shrouds, and water mist/fog systems at bulk material storage and handling facilities. As discussed in IX b above, up to five water fog systems are expected to be installed and each of these water fog systems is anticipated to use an average of 1,710 gallons per day, totaling 8,550 gallons of incremental daily water use. Thirty-four water mist systems are expected to be installed. Each of these water mist systems is anticipated to use 855 gallons per

day, totaling 29,070 gallons of incremental daily water use. Total incremental water use for the proposed wind screens, and judicious use of water is 37,620 gallons per day (see Table 3-10). The proposed project would be considered significant if it exceeded the CEQA threshold of 263,000 gallons or more of potable water per day. Since the proposed project is expected to use approximately 37,620 gallons per day, the proposed project will not significantly alter water demand or impact water suppliers.

XVIII c). The proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1are not expected to result in the construction of substantial new equipment, or result in substantial modifications to existing equipment or operations. The proposed project is not expected to require additional paving that would generate additional stormwater runoff. Therefore, the proposed project would not alter the existing drainage system or require the construction of new storm water drainage facilities. Nor would the proposed project 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.

XVIII f and g). Construction of air pollution control equipment as a result of proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1will not significantly increase solid or hazards wastes generated by the affected existing facilities. No significant impacts on waste generation are expected from the implementation of the proposed new rules or amendments to existing rules. Waste streams from affected facilities would be treated/disposed/recycled in the same manner as they currently are handled. Therefore, no significant impacts to hazardous or solid waste disposal facilities are expected due to the proposed new rules. Facilities are expected to continue to comply with all applicable federal, state, and local statutes and regulations related to solid and hazardous wastes.

Conclusion

Based upon these considerations, no significant adverse impacts to utilities/service systems are expected from the adoption of the proposed amendments to Rule 6-1, proposed new Regulation 6 or proposed new Rule 6-6.

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX.	**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

XIX a. The proposed new rules and rule amendments are designed to minimize fugitive dust emissions from industrial sources, disturbed sites, and construction sites. Modifications may be required to install windscreens, enclosures, shrouds, and water mist/fog systems at bulk handling facilities, which are located within industrial areas. New Regulation 6 establishes common definitions and test methods for all Regulation 6 rules. Rule 6-6 would prohibit the trackout of dirt and materials from bulk storage facilities, large construction sites and sites with large disturbed surfaces (e.g., landfills). The control of trackout is expected to be limited to traffic control measures, the use of grizzly bars or rumble grates, the use of truck wash stations, and the use of street sweepers and cleanup crews to clean up roadways. The facilities affected by amendments to Rule 6-1 would be made to existing industrial facilities (e.g., bulk handling and storage facilities) where native biological resources have been removed or are non-existent. In additional, cultural or tribal resources would also not be expected to occur. Development that may be subject to this rule may have significant environmental impacts, however, the actual development project is not part of proposed Rule 6-6 and the rule requirements imposed on the project will have no significant environmental impacts.

Therefore, the proposed new rules and 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. As discussed in Section IV - Biological Resources, Section V - Cultural Resources, and Section XVII – Tribal Cultural Resources, no significant adverse impacts are expected to biological, cultural or tribal cultural resources.

XIX b-c. The proposed new Regulation 6, new Rule 6-6 and amendments to Rule 6-1 are not expected to result in any significant environmental impacts. Air quality impacts during construction activities are expected to be minor and below applicable significance thresholds. The proposed project is expected to result in a reduction in operational emissions of TSP (3.14 tons per day), PM_{10} (1.60 tons per day), and $PM_{2.5}$ (0.21 tons per day) providing beneficial impacts to air quality. Further, the proposed project will implement Control Measure SS31 of the 2017 Clean Air Plan to help achieve the Plan's goals of reducing PM emissions to comply with ambient air quality requirements.

As discussed in the previous checklist discussions, the proposed new rules and rule amendments are not expected to exceed any of the applicable significance thresholds, which also serve as the cumulative significance thresholds. Therefore, the proposed project impacts are not considered to be cumulatively considerable (CEQA Guidelines §15064 (h)(1)) and are not expected to generate significant adverse cumulative impacts. The proposed project does not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in conjunction with other regulatory control projects. The proposed new rules and 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 environmental impacts are expected.

CHAPTER 4

REFERENCES

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CHAPTER 4

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APPENDIX A

CONSTRUCTION EMISSIONS CALCULATIONS

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Appendix A
Bay Area Air Quality Management District
Regulation 6, Rule 1; Regulation 6, Rule 6
Air Quality Analysis
Wind Screen Construction Equipment Emissions

Off-Road Emissions						Emission Factors (lb/hr)						Emissions (lb)						
Phase	Equipment	Amount	Days	Hours/Day	Total Hours	VOC	CO	NOx	SOx	PM10	CO2e	VOC	CO	NOx	SOx	PM10	PM2.5[1]	CO2e
Footings	Backhoe	1	5	8	40	0.026	0.365	0.306	0.001	0.019	0.019	1.023	14.587	12.256	0.032	0.769	0.754	0.767
Footings	Loader	1	5	8	40	0.026	0.365	0.306	0.001	0.019	0.019	1.023	14.587	12.256	0.032	0.769	0.754	0.767
Construction	Forklift	1	10	8	80	0.016	0.217	0.247	0.001	0.012	0.021	1.293	17.386	19.788	0.071	0.920	0.902	1.717
Construction	Crane	1	10	4	40	0.058	0.406	0.802	0.001	0.037	0.035	2.313	16.238	32.068	0.059	1.495	1.465	1.414
Construction	Manlift	1	10	8	80	0.005	0.174	0.103	0.000	0.002	0.011	0.400	13.921	8.219	0.035	0.191	0.187	0.852

(1) PM 2.5 emissions are calculated using PM10 emissions multipled by a factor of 0.98

On-Road Emissions							Emission Factors (lb/mi)						Emissions (lb)					
Phase	Equipment	Trips/Day	Days	Miles	Total Miles	Duty	VOC	CO	NOx	SOx	PM10	CO2e	VOC	CO	NOx	SOx	PM10	CO2e
Footings	Dump Truck	2	5	50	500	Heavy	0.001	0.004	0.011	0.000	0.003	3.759	0.268	1.909	5.743	0.018	1.359	0.852
Footings	Water Truck	1	5	1	5	Medium	0.000	0.002	0.005	0.000	0.001	2.256	0.001	0.010	0.027	0.000	0.004	0.005
Footings	Delivery Truck	6	5	50	1500	Heavy	0.001	0.004	0.011	0.000	0.003	3.759	0.803	5.727	17.229	0.054	4.076	2.557
Footings	Workers	10	5	21.6	1080	Light	0.000	0.002	0.000	0.000	0.000	0.908	0.069	2.638	0.419	0.010	0.353	0.445
Construction	Water Truck	1	10	1	10	Medium	0.000	0.002	0.005	0.000	0.001	2.256	0.003	0.020	0.053	0.000	0.009	0.010
Construction	Cement Truck	2	10	50	1000	Heavy	0.001	0.004	0.011	0.000	0.003	3.759	0.535	3.818	11.486	0.036	2.717	1.705
Construction	Workers	10	10	21.6	2160	Light	0.000	0.002	0.000	0.000	0.000	0.908	0.137	5.276	0.838	0.019	0.706	0.890

Total Project Emissions (lbs)[1]							
	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e[2]
Off-Road Footings	2.0458	29.1731	24.5110	0.0636	1.5385	1.5078	1.5333
On-Road Footings	1.1407	10.2832	23.4172	0.0815	5.7917	1.7315	3.8596
Footings Total	3.1865	39.4562	47.9283	0.1452	7.3303	3.2393	5.3929
Off-Road Construction	4.0049	47.5454	60.0759	0.1653	2.6063	2.5542	3.9835
On-Road Construction	0.6753	9.1131	12.3773	0.0555	3.4319	1.0982	2.6046
Construction Total	4.6802	56.6586	72.4532	0.2208	6.0382	3.6524	6.5881
Project Total	7.87	96.11	120.38	0.37	13.37	6.89	11.98

(1) Off-Road 2011. CO emissions from SCAQMD, 2006 : http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls

(2) - CO2e is reported in metric tons

Peak Daily Emissions (lbs/day)[1]							
	VOC	CO	NOx	SOx	PM10	PM2.5	CO2e[2]
Off-Road Footings	0.409	5.835	4.902	0.013	0.308	0.302	0.307
On-Road Footings	0.228	2.057	4.683	0.016	1.158	0.346	0.772
Footings Total	0.637	7.891	9.586	0.029	1.466	0.648	1.079
Off-Road Construction	0.400	4.755	6.008	0.017	0.261	0.255	0.398
On-Road Construction	0.068	0.911	1.238	0.006	0.343	0.110	0.260
Construction Total	0.468	5.666	7.245	0.022	0.604	0.365	0.659
Peak	0.64	7.89	9.59	0.03	1.47	0.65	1.08

(1) Off-Road 2011. CO emissions from SCAQMD, 2006 : http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls

(2) - CO2e is reported in metric tons

Fugitive EFs

Light Duty	0.000221
Medium Duty	0.000467
Heavy Duty	0.002314

Exhaust EFs

Light Duty	0.0001058
Medium Duty	0.0004105
Heavy Duty	0.0004029

On-Road PM2.5 Emissions										
Phase	Equipment	Duty	Total Miles	Fugitive PM EF	PM 2.5 Coefficient	On-Road Fugitives	Exhaust PM EF	PM2.5 Exhaust Coefficnet	On-Road Exhaust	Total On-Road PM2.5
Footings	Dump Truck	Heavy	500	0.002	0.170	0.197	0.000	0.980	0.197	0.394
Footings	Water Truck	Medium	5	0.000	0.170	0.000	0.000	0.980	0.002	0.002
Footings	Delivery Truck	Heavy	1500	0.002	0.170	0.590	0.000	0.980	0.592	1.182
Footings	Workers	Light	1080	0.000	0.170	0.041	0.000	0.980	0.112	0.153
Construction	Water Truck	Medium	10	0.000	0.170	0.001	0.000	0.980	0.004	0.005
Construction	Cement Truck	Heavy	1000	0.002	0.170	0.393	0.000	0.980	0.395	0.788
Construction	Workers	Light	2160.00	0.000	0.170	0.081	0.000	0.980	0.224	0.305

APPENDIX B
DRAFT NEGATIVE DECLARATION

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[DRAFT NEGATIVE DECLARATION FOR PUBLIC REVIEW AND COMMENT]

CALIFORNIA ENVIRONMENTAL QUALITY ACT
NEGATIVE DECLARATION

New Regulation 6: Particulate Matter–Common Definitions and Test Methods Amendments to Regulation 6, Rule 1: General Requirements; and New Regulation 6, Rule 6: Prohibition of Trackout

Pursuant to the California Environmental Quality Act (CEQA), Public Resources Code §§ 21000 *et seq*, and Sections 15071 and 15074 of the CEQA Guidelines, the Board of Directors of the Bay Area Air Quality Management District (Air District) hereby adopts this Negative Declaration finding that the adoption of New Regulation 6: Particulate Matter-Common Definitions and Test Methods; Amendments to Regulation 6, Rule 1: General Requirements; and New Regulation 6, Rule 6: Prohibition of Trackout will not have a significant effect on the environment.

Project Name: New Regulation 6: Particulate Matter–Common Definitions and Test Methods; Amendments to Regulation 6, Rule 1: General Requirements and New Regulation 6, Rule 6: Prohibition of Trackout

Project Description: The Air District has regulatory authority over stationary sources of air pollution in the San Francisco Bay Area. New Regulation 6 provides common definitions and source test methods that will be used in all Regulation 6 rules. New Regulation 6 does not create any substantive regulatory requirements or emission limits and will have no substantive effect on regulated entities or how they operate.

The proposed amendments to Rule 6-1 update particulate matter (PM) emission requirements and fall into three broad categories: (1) update the current PM emissions limits for general sources of PM emissions (including both concentration limits and mass emissions limits) to reflect the most stringent emissions levels achievable; (2) clarify the testing requirements to measure PM emissions and determine compliance with the rule; and (3) specify the source test methods used for compliance testing. Amendments to Rule 6-1 will also address PM emissions from the storage and handling of significant quantities of bulk materials, including petroleum coke and coal. The Staff Report and Initial Study provide background information on the rationale for updating Regulation 6, Rule 1.

New Rule 6-6 focuses on road dust and prohibits trackout of mud and dirt onto paved roadways from large bulk material storage and handling sites, large construction sites and large disturbed surface sites (greater than one acre). Prohibition of trackout is intended to control PM emissions. A separate Staff Report has been developed for proposed new Rule 6-6 to provide supporting information.

Project Location: The nine-county jurisdiction of the Bay Area Air Quality Management District, which includes all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties, and portions of southwestern Solano County and southern Sonoma County. A map of the project location is provided in Figure 2-1. on page 2-3 of the Initial Study attached hereto.

Project Proponent and Lead Agency: The Bay Area Air Quality Management District.

Finding of No Significant Impact: The Board of Directors of the Bay Area Air Quality Management District hereby finds, using its own independent judgment and analysis, that based on the whole record (including the Initial Study and public comments received) there is no substantial evidence that New Regulation 6: Particulate Matter–Common Definitions and Test Methods; Amendments to Regulation 6, Rule 1: General Requirements; and New Regulation 6, Rule 6: Prohibition of Trackout will have a significant effect on the environment.

Initial Study: A copy of the Initial Study documenting the reasons supporting the finding of no significant impact is attached hereto.

Mitigation Measures: No mitigation measures need to be included in the project to avoid potentially significant effects, as the project will not have any potentially significant effects.

VOLUME 1
ENFORCEMENT PROCEDURES

PART 1
~~EVALUATION~~ ASSESSMENT OF VISIBLE EMISSIONS OPACITY

~~REF: Regs. 6, 11-2~~
~~10, 12-4~~
~~California Health and Safety Code section 41701~~

1. INTRODUCTION

Various District Regulations contain visible emission standards. Compliance with these standards is determined by visual observation. Observers are trained to make field evaluations by a certification process involving repeated observations of smoke plumes with a known darkness or opacity.

This Part of the Manual of Procedures adopts as District procedure a U.S. Environmental Protection Agency (EPA) method for certifiying observers and making observations in the field. The EPA method is modified to permit its use with District regulations, state law, and federal standards.

2. APPLICABILITY

Modified EPA Method 9 is to be used for certifying observers and for determining compliance with District regulations, with state law, or with certain federal standards enforced by the District. All field observatins of visible emisions will comply with this Part.

3. ADOPTION OF MODIFIED METHOD 9

EPA Method 9 (40 C.F.R., Part 60, Appendix A, Method 0) is hereby adopted for certifiying observers and for field evaluations of visible emissions. Method 9 is modified in the following respects: 1) readings may be expressed in Ringelmann numbers or in opacity, and 2) violations may be established by readings showing emissions of the magnitude and duration specified in the applicable standard.

4. EVALUATION OF VISIBLE EMISSIONS

Note: This method can only be conducted by an individual who is a California Air Resources Board (CARB) certified Visible Emission Evaluation (VEE) observer. Qualification and testing requirements for a CARB-certified VEE observer can be obtained from the AQMD.

A. "TYPE A" EMISSION

A "Type A" emission point is an emission point, having sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured and where the nature and extent of air contaminants do not change substantially between a sampling point and the emission point.

i. OBSERVER'S LOCATION

1. Observations shall be made such that the line of sight is approximately at a right angle (90^0) to the path of the plume.
2. The observer shall be at least three stack heights away from the emission point height.
3. Observations shall be made at the point of greatest opacity in the plume.
4. The plume shall be observed at its point of maximum opacity against a suitable background.
5. Observations shall be made with the observer facing away from the sun. The sun must be within a 140^o arc behind the observer.

ii. **PLUME EVALUATION RECORD (PER)**

The observer shall determine the following items for the Plume Evaluation Record (PER):

1. Observation Point - The approximate distance and direction from the emission point. If necessary, a landmark, street address, or intersection may be added.
2. Wind Direction - The direction that the wind is blowing from.
3. The date and time that observations began and were discontinued
4. Estimated distance to the emission location
5. Approximate wind direction and estimated wind speed
6. Description of the weather condition, plume color, and background, are recorded on the PER after opacity readings are completed. If a wet plume (defined below) is present, indicate the relative humidity as determined by sling psychrometer.
7. Provide a two-dimensional overhead diagram on the PER. The diagram shall include the observer's position relative to the emission point, the sun's position, the direction of the plume and of the wind. Indicate north by drawing and labeling an arrow. Do not use degrees in addition to compass point designations. Indicate the time when emissions were first noticed and when they were last seen.

iii. **TIME INTERVAL BETWEEN READINGS**

1. Readings shall be noted on a PER at approximately 15 second intervals during the observation. Each 15 second momentary observation recorded shall be deemed to represent the average value of emissions for that 15 second period.
2. Reading intervals up to 1 minute shall be permitted where the appearance of the emission does not vary during such interval.
3. Where two plumes must be read simultaneously, readings will be taken alternately.

iv. **WET PLUMES**

1. Wet plumes are those plumes where the presence of uncombined water produces a visible emission which fails to meet the limitations of District regulations.
2. Wet plumes are characterized as being very white, opaque, and billowy, and usually dissipate very rapidly. Residual plume is that part of the plume which continues to exist after the apparent evaporation of the water droplets in a wet plume. The spatial relationship of the wet plume to the emission point (attached or detached, as defined below) will determine where the residual plume will be evaluated.
3. When a wet plume is attached (i.e., when condensed water vapor is present as it emerges from the emission outlet), opacity

of a residual plume must be evaluated beyond the point at which condensed water vapor is no longer visible.

4. When a wet plume is detached (i.e., when water vapor in a plume condenses and becomes visible at a distance from the emission outlet), opacity of emissions shall be evaluated at the outlet prior to formation of the wet plume, unless the opacity is higher in a residual plume after dissipation of the wet plume.
5. Wet plumes will be recorded as indicated on PER. The opacity of the plume at the emission point will be recorded on the PER. The residual reading for each observation shall also be recorded on the PER.

B. "TYPE B" EMISSION

A "Type B" emission point is an emission point other than a type A emission point. Fugitive dust emissions sources include, but are not limited to, unpaved road travel, wind, screening, dumping, stockpiling, earthmoving, grading, and trenching.

i. OBSERVER'S LOCATION

1. Observations shall be made such that the line of sight is approximately at a right angle (90^0) to the path of the plume.
2. Observations shall be made at least 20 feet away from the source of a ground level visible emission or a distance at least three times the difference in vertical height of the observer and the elevated visible emission point.
3. Do not include another plume in the line of sight of the plume being read.
4. Observations shall be made at the point of greatest opacity in the plume.
5. The plume shall be observed at its point of maximum opacity against a suitable background.
6. Observations shall be made with the observer facing away from the sun. The sun must be within a 140^o arc behind the observer.

ii. PLUME EVALUATION RECORD (PER)

The observer shall determine the following items for the Plume Evaluation Record (PER):

1. Observation Point - The approximate distance and direction from the emission point. If necessary, a landmark or street address or intersection may be added.
2. Wind Direction - The direction from which the wind is blowing.
3. The date and time that observations began and were discontinued.
4. Estimated distance to the emission location.
5. Approximate wind direction and estimated wind speed.
6. Description of the weather condition, plume color, and background, are recorded on the PER after opacity readings are completed.
7. Provide a two-dimensional overhead diagram on the PER. The diagram shall include the observer's position relative to the emission point, the sun's position, the direction of the plume and of the wind. Indicate north by drawing and labeling an arrow. Do not use degrees in addition to compass point designations. Indicate the time when emissions were first noticed and when they were last seen.

iii. TIME INTERVAL BETWEEN READING METHODS

The observer can determine which of the following methods to use based on the type of visible emission. Cumulative Time Method shall be primarily used for continuous vislbe emissions. The Time Averaged Method shoud be used for event type visible emissions.

1. **CUMULATIVE TIME METHOD**
   This method is for evaluating continuous fugitive dust emissions and for the determination of the opacity of continuous fugitive dust emissions by a qualified observer. Continuous fugitive dust emissions sources include activities that produce emissions continuously during operations such as earthmoving, grading, and trenching. Emissions from these types of continuous activities are considered continuous even though speed of the activity may vary and emissions may be controlled to 100%, producing no visible emissions, during parts of the operation.
   a. Readings shall be noted on a PER at approximately 15 second intervals during the observation. Each 15 second momentary observation recorded shall be deemed to represent the average value of emissions for that 15 second period.
   b. Reading intervals up to 1 minute shall be permitted where the appearance of the emission does not vary during such interval.

2. **TIME AVERAGED METHOD**
   This method is for evaluating intermittent fugitive dust emissions and for the determination of the opacity of intermittent fugitive dust emissions by a qualified observer. Intermittent fugitive dust emissions sources include activities that produce emissions intermittently such as unpaved road travel, screening, dumping, and stockpiling where predominant emissions are produced intermittently.
   a. Observer will pick a point where the emission event will occur.
   b. Each event type will be considered one emission point (i.e. travel on unpaved road, dumping). Multiple event types cannot be combined.
   c. Readings shall be noted on a PER during each event at the 0 second and the 5 second interval.
   d. Each set of 0 seciond and 5 second readings will be representative of a 15 second period.
   e. All readings will be added and divided by 2 times the number of events (Example: 12 events will result in 24 readings for three minutes).
   f. The result will be the time average opacity for the time period observed.