



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

BOARD OF DIRECTORS  
REGULAR MEETING  
OCTOBER 21, 2015

A regular meeting of the Bay Area Air Quality Management District Board of Directors will be held in the 7<sup>th</sup> Floor Board Room at the Air District Headquarters, 939 Ellis Street, San Francisco, California.

**Questions About  
an Agenda Item**

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

**Meeting Procedures**

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

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

This meeting will be webcast. To see the webcast, please visit <http://www.baaqmd.gov/The-Air-District/Board-of-Directors/Agendas-and-Minutes.aspx> at the time of the meeting.

## 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** 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 three 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 Boards at the location of the meeting and prior to commencement of the meeting. The remainder of the speakers wishing to address the Board on non-agenda matters will be heard at the end of the agenda, and each will be allowed 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** After the initial public comment on non-agenda matters, 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.

Up to ten (10) speakers may speak for three minutes on each item on the Agenda. If there are more than ten persons interested in speaking on an item on the agenda, 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. Speakers are permitted to yield their time to one other speaker; however no one speaker shall have more than six minutes. 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  
OCTOBER 21, 2015  
9:45 A.M.

BOARD ROOM  
7TH FLOOR

## CALL TO ORDER

Chairperson, Carole Groom

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 three 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 – 9)

Staff/Phone (415) 749-

3. Minutes of the Board of Directors Meeting of October 7, 2015 **Clerk of the Boards/5073**

*The Board of Directors will consider approving the draft minutes of the Board of Directors Meeting of October 7, 2015.*

4. Board Communications Received from October 7, 2015 through October 20, 2015

**J. Broadbent/5052**  
[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*A copy of communications directed to the Board of Directors received by the Air District from October 7, 2015 through October 20, 2015, 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](mailto: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 months.*

6. Notices of Violation Issued and Settlements in Excess of \$10,000 in the Month of September 2015 **B. Bunger/4920**  
[bbunger@baaqmd.gov](mailto:bbunger@baaqmd.gov)

*In accordance with Resolution No. 2012-08, the Board of Directors will receive a list of all Notices of Violation issued, and all settlements for amounts in excess of \$10,000 during the month of September 2015.*

7. Participation in Year Five of the California Goods Movement Bond Program **J. Broadbent/5052**  
[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*The Board of Directors will consider adopting a resolution in support of the Air District's application for Year 5 Goods Movement Bond Program (I-Bond) funding; authorizing the Executive Officer/APCO to enter into agreements with the California Air Resources Board (ARB) related to the acceptance of I-Bond funding; and authorizing the Executive Officer/APCO to appropriate I-Bond funding and to enter into agreements with eligible applicants for projects ranked and approved by the ARB.*

8. Allocation to Support Greenhouse Gas Emission Reduction Fund Projects **J. Broadbent/5052**  
[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*The Board of Directors will consider adopting a resolution in support of the Air District's application for California Air Resources Board (ARB) Low Carbon Transportation Greenhouse Gas Emission Reduction Funds (GGRF); allocating up to \$4.65 million in Transportation Fund for Clean Air (TFCA) funding as match for GGRF projects using a project cost-effectiveness of \$500,000 per ton of emissions reduced; authorizing the Executive Officer/APCO to enter into agreements with the ARB and partners related to the acceptance of GGRF funds; and authorizing the Executive Officer/APCO to appropriate GGRF funds and to enter into agreements with project participants.*

9. Consider Authorization for a Contract Extension to Technical and Business Systems and Execution of a Purchase Order in Excess of \$70,000 Pursuant to Administrative Code Division II Fiscal Policies and Procedures, Section 4.3 Contract Limitations, for Continued Operation of the BioWatch Monitoring Network **J. Broadbent/5052**  
[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*The Board of Directors will consider authorizing the Executive Officer/APCO to execute a contract extension to Technical and Business Systems and execution of a purchase order in excess of \$70,000 to continue operation of the BioWatch Monitoring Network.*

## **COMMITTEE REPORT**

10. Report of the Nominating Committee Meeting of October 21, 2015

CHAIR: C. Groom

J. Broadbent/5052  
[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*The Committee will receive the following reports and may recommend Board of Directors' approval of Board Officers for:*

A) **Consideration and Nomination of Board Officers for the Term of Office Commencing 2016**

- 1) *Chairperson;*
- 2) *Vice Chairperson; and*
- 3) *Secretary*

## **PUBLIC HEARING**

11. Public Hearing to Receive Testimony and Consider Adoption of Proposed Amendments to Air District Regulation 6; Rule 3: Wood Burning Devices and Adoption of a Negative Declaration pursuant to the California Environmental Quality Act (CEQA) J. Broadbent/5052  
[jbroadbent@baaqmd.gov](mailto:jbroadbent@baaqmd.gov)

*The Board of Directors will receive testimony and consider adoption of proposed amendments to Air District Regulation 6; Rule 3: Wood Burning Devices and Adoption of a Negative Declaration pursuant to the California Environmental Quality Act (CEQA)*

## **PUBLIC COMMENT ON NON-AGENDA MATTERS**

12. **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 three minutes each to address the Board on non-agenda matters.*

## **BOARD MEMBERS' COMMENTS**

13. *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**

14. **Report of the Executive Officer/APCO**

15. **Chairperson's Report**

16. **Time and Place of Next Meeting**

*Wednesday, November 4, 2015, 939 Ellis Street, San Francisco, California 94109 at 9:45 a.m.*

17. **Adjournment**

*The Board meeting shall be adjourned by the Board Chair.*

## **CONTACT:**

**MANAGER, EXECUTIVE OPERATIONS**  
**939 ELLIS STREET, SAN FRANCISCO, CA 94109**  
**mmartinez@baaqmd.gov**

**(415) 749-5016**  
**FAX: (415) 928-8560**  
**BAAQMD homepage:**  
[www.baaqmd.gov](http://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.
- To request special accommodations for those persons with disabilities notification to the Clerk's Office should be given in a timely manner, so that arrangements can be made accordingly.

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 939 Ellis Street, San Francisco, CA 94109, at the time such writing is made available to all, or a majority of all, members of that body.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**  
**939 ELLIS STREET, SAN FRANCISCO, CALIFORNIA 94109**  
**FOR QUESTIONS PLEASE CALL (415) 749-5016 or (415) 749-4941**

**EXECUTIVE OFFICE:**  
**MONTHLY CALENDAR OF AIR DISTRICT MEETINGS**

**OCTOBER 2015**

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Executive Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i> - CANCELLED	Monday	19	9:30 a.m.	Board Room
<b>Board of Directors Stationary Source Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i> - CANCELLED	Monday	19	10:30 a.m.	Board Room
<b>Board of Directors Nominating Committee</b> <i>(At the Call of the Chair)</i>	Wednesday	21	9:30 a.m.	Room 716
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	21	9:45 a.m.	Board Room
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i>	Thursday	22	9:30 a.m.	Board Room
<b>Board of Directors Public Engagement Committee</b> <i>(Meets at the Call of the Chair)</i>	Monday	26	9:30 a.m.	Board Room
<b>Board of Directors Legislative Committee</b> <i>(Meets at the Call of the Chair)</i>	Monday	26	10:30 a.m.	Board Room
<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month)</i> - CANCELLED	Wednesday	28	9:30 a.m.	Board Room

**NOVEMBER 2015**

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	4	9:45 a.m.	Board Room
<b>Board of Directors Executive Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i>	Monday	16	9:30 a.m.	Board Room
<b>Board of Directors Stationary Source Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i>	Monday	16	10:30 a.m.	Board Room
<b>Board of Directors Nominating Committee</b> <i>(At the Call of the Chair)</i> - CANCELLED	Wednesday	18	9:30 a.m.	Room 716
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	18	9:45 a.m.	Board Room
<b>Board of Directors Climate Protection Committee</b> <i>(Meets 3<sup>rd</sup> Thursday of every other Month)</i>	Thursday	19	9:30 a.m.	Board Room

## NOVEMBER 2015

<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month)</i>	<b>Wednesday</b>	<b>25</b>	<b>9:30 a.m.</b>	<b>Board Room</b>
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i>	<b>Thursday</b>	<b>26</b>	<b>9:30 a.m.</b>	<b>Board Room</b>

## DECEMBER 2015

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	<b>Wednesday</b>	<b>2</b>	<b>9:45 a.m.</b>	<b>Board Room</b>
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	<b>Wednesday</b>	<b>16</b>	<b>9:45 a.m.</b>	<b>Board Room</b>
<b>Board of Directors Executive Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i>	<b>Monday</b>	<b>21</b>	<b>9:30 a.m.</b>	<b>Board Room</b>
<b>Board of Directors Stationary Source Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of each Month)</i>	<b>Monday</b>	<b>21</b>	<b>10:30 a.m.</b>	<b>Board Room</b>
<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month)</i>	<b>Wednesday</b>	<b>23</b>	<b>9:30 a.m.</b>	<b>Board Room</b>
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i>	<b>Thursday</b>	<b>24</b>	<b>9:30 a.m.</b>	<b>Board Room</b>

MV – 10/14/15 (2.53.p.m.)

G/Board/ExecutiveOffice/Moncal



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 9, 2015

Re: Minutes of the Board of Directors Meeting of October 7, 2015

RECOMMENDED ACTION

Approve the attached draft minutes of the Board of Directors (Board) Meeting of October 7, 2015.

DISCUSSION

Attached for your review and approval are the draft minutes of the Board Meeting of October 7, 2015.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Sean Gallagher  
Reviewed by: Maricela Martinez

Attachment: Draft Minutes of the Board Meeting of October 7, 2015

## AGENDA: 3 – ATTACHMENT

Draft Minutes - Board of Directors Regular Meeting of October 7, 2015

Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109  
(415) 749-5073

Board of Directors Regular Meeting  
Wednesday, October 7, 2015

### **DRAFT MINUTES**

*Note: Audio and video recordings of the meeting are available on the website of the Bay Area Air Quality Management District at <http://www.baaqmd.gov/about-the-air-district/board-of-directors/resolutionsagendasminutes>.*

1. **CALL TO ORDER:** Vice-Chairperson Eric Mar called the meeting to order at 9:48 a.m.

**Opening Comments:** None.

#### **Roll Call:**

Present: Vice-Chairperson Eric Mar; Secretary Liz Kniss; and Directors John Avalos, Teresa Barrett, David J. Canepa, Cindy Chavez, Margaret Fujioka, John Gioia, Scott Haggerty, David Hudson, Roger Kim (on behalf of Edwin Lee), Nate Miley, Karen Mitchoff, Jan Pepper, Katie Rice, Mark Ross, Rod Sinks, Jim Spering, Brad Wagenknecht and Shirlee Zane.

Absent: Chairperson Carole Groom and Director Tom Bates.

**Pledge of Allegiance:** Vice-Chairperson Eric Mar led the Pledge of Allegiance.

2. **PUBLIC COMMENT ON NON-AGENDA MATTERS:**

Patti Weisselberg, Families for Clean Air, addressed the Board of Directors (Board) in opposition to the proposed rule on wood smoke stating it is too permissive and speaking against incentivizing combustion-based heat sources.

NOTED PRESENT: Director Kniss was noted present at 9:51 a.m.

Lindsay Epperly, Phillips 66, addressed the Board regarding her professional and academic experiences and to request the protection of good jobs in the Bay Area when considering proposed rules.

NOTED PRESENT: Director Miley was noted present at 9:54 a.m.

Marc Ventura, Phillips 66, addressed the Board regarding his daily work to refine the cleanest fuel in the country and to request that the Board recall how well refineries are regulated under existing rules when considering the new proposed standards.

Shannon Wright, Travis Industries / Hearth, Patio and Barbecue Association, addressed the Board in opposition to revisions to the woodsmoke rule that would require non-combustion heating devices because of the operational expense for users.

NOTED PRESENT: Directors Fujioka, Haggerty and Pepper were noted present at 9:59 a.m.

Sharon Evans, Phillips 66, addressed the Board regarding her long-term employment by Phillips; in objection to characterizations of her employer as unconcerned about safety and environmental stewardship; and to suggest the possibility of a refinery shut down is real.

Mike Miller, Phillips 66 / United Steel Workers, addressed the Board in opposition to the proposed refinery rules and in support of allowing State programs to achieve the sought after greenhouse gas emissions reductions.

**3. COMMENDATIONS / PROCLAMATIONS / AWARDS:**

Vice-Chairperson Mar postponed this agenda item in the interest of time.

**PRESENTATION**

**4. ADVISORY COUNCIL REPORT ON URBAN HEAT ISLAND IMPACTS [OUT OF ORDER AGENDA ITEM 14]**

Vice-Chairperson Mar postponed this agenda item in the interest of time.

Board Comments: None.

Public Comments: No requests received.

Board Action: None.

**5. ADVISORY COUNCIL SUMMARY OF PAST ACTIVITIES [AGENDA ITEM 15]**

Vice-Chairperson Mar postponed this agenda item in the interest of time.

Board Comments: None.

Public Comments: No requests received.

Board Action: None.

**CONSENT CALENDAR [AGENDA ITEMS 4 – 8]**

- 6. Minutes of the Board Meeting of September 2, 2015;**
- 7. Board Communications Received from September 2, 2015 through October 6, 2015;**
- 8. Air District Personnel on Out-of-State Business Travel;**

9. **Notice of Violations Issued and Settlements in Excess of \$10,000 in the Month of August 2015; and**
10. **Set a Public Hearing for October 21, 2015 to Consider Adoption of Proposed Amendments to Regulation 6; Rule 3: Wood-Burning Devices, and Adoption of a Negative Declaration pursuant to the California Environmental Quality Act (CEQA).**

Board Comments: None.

Public Comments: No requests received.

Board Action:

Director Spring made a motion, seconded by Director Hudson, to approve Consent Calendar Items 6 through 10 (agenda items 4 through 8), inclusive; and the motion carried by the following vote of the Board:

AYES: Avalos, Barrett, Canepa, Chavez, Fujioka, Gioia, Haggerty, Hudson, Kim, Kniss, Mar, Miley, Mitchoff, Pepper, Rice, Ross, Sinks, Spring, Wagenknecht and Zane.  
NOES: None.  
ABSTAIN: None.  
ABSENT: Bates and Groom.

## **COMMITTEE REPORTS**

11. **Report of the Climate Protection Committee (CPC) Meeting of September 17, 2015 [Agenda Item 9]**

CPC Chairperson Pepper read:

The CPC met on Thursday, September 17, 2015, and approved the minutes of May 21, 2015.

The CPC received and discussed the presentation *Community Choice Energy (CCE) in California*, from Shawn Marshall, Director, for LEAN Energy US, including an explanation of how CCE works; CCE around the country; policy framework and available programs in California; CCE momentum in the Bay Area; CCE growth in California; CCE reduction of greenhouse gases (GHG); an emissions rate comparison of San Mateo County CCE versus Pacific Gas & Electric; the possible San Mateo County power generation mix; 2014 emission profiles for Sonoma Clean Power and Marin Clean Energy; CCE cost comparison versus Marin and Sonoma CCE financial conditions; CCE collective value in the Bay Area; and CCE green multiplier effects.

The CPC then received and discussed the staff presentation *Air District Activities to Monitor, Analyze and Reduce Methane Emissions*, including methane sources; a methane strategy to get quick emissions reductions; quantification of the warming potential of methane; 2015 Bay Area GHG emissions on both 20- and 100-year time scales; 2015 Bay Area GHG emissions by source and pollutant; summaries of phase 1, enhanced methane

measurements, and phase 2, mobile monitoring and near-source methane sampling; expected outcomes from enhanced methane measurements; initial proposed climate rulemaking; additional activities to reduce methane emissions; and next steps.

The CPC finally received and discussed the staff memorandum *Summary of Key California Climate Legislation in 2015*, including updates on a number of significant climate change issues, such as what mandates after 2020 are appropriate for reductions in GHG emissions, increases to renewable power, buildings' energy efficiency and expenditure of cap-and-trade revenues.

The next meeting of the CPC is on Thursday, November 19, 2015, at 9:30 a.m.

Public Comments:

Jed Holtzman, 350 Bay Area, addressed the Board to encourage review by the full Board of the presentations made to the CPC; to report that CCEs are progressing in most Bay Area counties; to encourage Air District support for local governments by helping with the formation of joint powers authorities and similar planning work; and to request that methane rulemaking be performed on an accelerated timeline.

Board Comments:

The Board and staff discussed the value added by a staff summary of the state of legislation impacting climate change and the California Air Resources Board (ARB).

Board Action: None; receive and file.

**12. Report of the Stationary Source Committee (SSC) Meeting of September 21, 2015  
[Agenda Item 10]**

SSC Chairperson Gioia read:

The SSC met on Monday, September 21, 2015, and approved the minutes of April 20, 2015 and May 27, 2015.

The SSC received and discussed the staff presentation *Refinery Strategy*, including summaries of the development and goals of the overall refinery strategy; target reductions in harmful emissions; summary of rulemaking phases I and II to reduce harmful emissions; continuous monitoring proposals; regulation 12, rule 15, tie-ins to future actions; regulation 12, rule 16, goals of limiting pollution and protecting health; provisions to ensure best practices; precedent setting actions contained in the rules; issues raised by Communities for a Better Environment (CBE) and other community groups; how the rulemaking addresses the issues of criteria pollutants, toxic air contaminants and greenhouse gases; a summary of the ARB perspective on the local GHG rules; an overview of the regulatory program to reduce GHG from stationary sources; and next steps.

The SSC asked staff to provide additional information about the Refinery Strategy, and that information is included in the Board packet for today's meeting.

The next meeting of the SSC is on Monday, October 19, 2015, at 10:30 a.m.

Director Gioia asked staff to provide an update.

Jack Broadbent, Executive Officer/Air Pollution Control Officer (APCO), provided the staff update on the refinery rule work, summarized current proposals and introduced Eric Stevenson, Director of Meteorology, Measurement and Rules, who provided additional details regarding the current proposals.

#### Board Comments:

The Board and staff discussed the expected strengthening of the health risk guidelines and the likely timing of the related analyses; the absence of the some attachments in the meeting agenda packet; the desire for historic air quality data over 20 years that is both refinery specific and that includes the cost of adapting to the proposed changes; air quality progress remaining relative to particulate matter; the importance of the proper prioritization of air quality targets and remaining cognizant of public health; the recommendations on Air District action in a letter from Richard W. Corey, Executive Officer, ARB, dated September 17, 2015; the cost-effectiveness of the air monitoring proposals and the potential impacts of the same on employment and public health; the state of dialogue on the Citizen's For A Better Environment (CBE) proposal for an emissions cap for refineries; and the justification for and nature of Mr. Corey's recommendations for the Air District consideration.

#### Public Comments:

Laurie Mintzer, Chevron, addressed the Board regarding her view that the refinery rulemaking was inappropriately fast, provided inadequate time for public comment and that the overreaching nature of many of the proposals make them technologically infeasible; and in opposition to various specific proposals making up the suite of refinery rules.

Steven Yang, Chevron, addressed the Board to suggest the nine proposed rules are being advanced because of the influence of a uniformed public and quoted statements made by community group representatives at past meetings relative to refinery operations.

Susan Gustofson addressed the Board as a long-term resident of the Bay Area and as a Valero employee; to express concern about the economic and public health impacts of the proposed rules; in support of allowing additional time for the rulemaking process; to express concern about the time provided for public comment on the proposed rules; and to suggest the pace of rulemaking is too aggressive.

Ratha Lai, Sierra Club, addressed the Board regarding the slow progress being made on the issues of concern to the public; in support of imposing numeric caps on refineries and on including an environmental justice component to the rules and on working to develop a plan for a just economic transition for workers impacted by the proposed rules.

Greg Karras, CBE, addressed the Board to express concern about the current version of the proposed rules; to suggest a data disparity exists relative to whether refinery emissions have been increasing or decreasing; to suggest the letter from Mr. Corey, dated September 17, 2015, is baseless; to encourage a robust discussion on refinery emissions caps; and in support of a slowed pace of rulemaking to avoid industry lawsuits after final passage.

Roger Lin, CBE, addressed the Board to provide a history of dialogue with Air District staff relative to setting numeric caps on GHG emissions; to suggest that Air District staff is unable to justify a rejection of CBE's written comments submitted during rulemaking; and to suggest the CBE proposal be reviewed in a public meeting.

Kevin Buchan, Western States Petroleum Association, addressed the Board to refute the refinery emissions data presented by CBE and to request additional information on the source of that data; and in opposition to two provisions of the proposed rules that require the submittal of confidential businesses information to Air District staff.

Kathy Wheeler, Shell, addressed the Board to suggest that the anticipated Office of Environment Health Hazard Assessment (OEHHA) standards will spur a great deal of operational improvements at the Shell Refinery; in opposition to proposed rules 12-15 and 12-16; and to propose that the agenda of community groups is not improved public health but the closure of the refineries.

Debi Lowe, Phillips 66, addressed the Board regarding she and her family members' employment by the petroleum industry and in opposition to proposed rules that will impact jobs.

Don England, Tesoro Refining, addressed the Board regarding he and his wife's active participation in their community, made possible by his employer, and to suggest that a refinery shut down would have a profound financial impact for employees, their families and many others in the Bay Area.

Shari Mejia, Shell Martinez Refinery, addressed the Board to suggest that Shell is an important member of its community currently complying with the highest emissions control standards in the world.

Gordon Johnson, Shell Martinez Refinery, addressed the Board regarding his professional history, his personal efforts at sustainable living and in opposition to proposed regulations that seem well intentioned but poorly planned.

Jed Holtzman, 350 Bay Area, addressed the Board to suggest the Air District's current regulatory program is largely speculative in the absence of the current proposed rules regarding refineries; inquired about the status of items requested of the staff by the Board at the meeting on June 3, 2015; and provided a list of perceived flaws in the staff report.

Bill Quinn, California Council for Environmental and Economic Balance, addressed the Board regarding the amount of time provided for public comment and the lack of staff response to a request for an extension of time for the same; in opposition to the regulatory approach detailed in the proposed rules; and to note inconsistencies in the GHG emissions data presented.

Tammy Gard, Shell, addressed the Board regarding her family's and many other families' dependence on the oil industry for their livelihoods.

Matt Buell, Tesoro, addressed the Board regarding the lowering of emissions that has resulted from a gradual tightening of the air quality standards over time and in support of a return to the traditional rulemaking process.

Paul Adler, Phillips 66, addressed the Board to suggest there has been a lowering of Bay Area refinery emissions over the last decade and to ask the Board to contemplate inconsistencies in facts, while considering his suggestion that the desire of community groups is to misinform the process and to impugn Air District and industry credibility.

Anna Rikkelman addressed the Board regarding the number of jobs that rely on the refineries; to suggest that many of the proposed rules are duplicative; and to express concern about the economic impact of the rules for the Bay Area.

Aimee Lohr, Phillips 66, addressed the Board regarding the opportunities provided her by the refinery industry and to recall examples of company involvement in and support of its community.

Don Bristol, Phillips 66, addressed the Board to complement the rulemaking workshops; to suggest that refinery emissions have been improving over time; in support of proposed rule 12-15, provided adequate time is provided to understand and implement guidelines from OEHHA and the subsequent health risk assessments; in opposition to imposing emissions caps at refineries; and to request an extension of time for the rulemaking process.

Board Comments (continued):

The Board and staff discussed the rulemaking timelines; possible reasons for the discrepancies in emissions levels discussed; the business as usual increase in GHGs that the State cap-and-trade program is expected to halt; the credentials of those who will be performing the economic analyses for Air District rulemaking; whether and what input has been received from interests within refinery communities relative to the economic ramifications of the proposed rules; the value of a study session on the rules; whether refinery emissions are contributing to GHG increases and whether the proposed rules are expected to mitigate this increase; the potency of methane relative to global warming; the relevance of proposed rules targeting methane and an update on discussions about the same with ARB; the difference, if any, between actual refinery emissions and their potential to emit (PTE); the findings required for the Board to take action in its rulemaking decisions and the belief that the finding cannot be made relative to caps below PTE; a discussion of GHG emissions in light of the State's cap-and-trade program and the authority of the Air District; an explanation of the history and current status of PTE; a summary of rulemaking efforts and the requisite components of the process; and the importance of bifurcating GHG issues and the impact of toxic pollutants on local communities.

Board Action: None; receive and file.

**13. Report of the Ad Hoc Building Oversight Committee (AHBOC) Meeting of September 23, 2015 [Agenda Item 11]**

Vice-Chairperson Mar read:



The AHBOC met on Wednesday, September 23, 2015 and approved the minutes of April 15, 2015 upon establishing a quorum.

The AHBOC received and discussed the staff presentation *Bay Area Metro Center – 375 Beale Street Project Status Report*, including updates on construction, furniture procurement and move coordination; 375 Beale Street building name; and next steps.

The AHBOC then received and discussed the staff presentation *Update on Parking for Air District Operations*, including an overview of Air District fleet and current parking; parking available at 375 Beale Street; potential solutions for operational parking investigated and potential fleet operation efficiencies; bids on parking property; and Board Direction.

The AHBOC postponed the staff presentation, *Update on Design and Financing of New Information Technology Infrastructure*, until a future meeting.

The AHBOC finally received and discussed the staff presentation *Bay Area Metro Center – 375 Beale Street Update on Proposed Shared Services Organization*, including background on the services to be shared; an update on progress towards sharing; shared services draft budget framework; and next steps.

The next meeting of the AHBOC is at the call of the Chair.

**14. Report of the Executive Committee (EC) Meeting of September 23, 2015 [Agenda Item 12]**

Vice-Chairperson Mar, with the concurrence of the Board, waived reading of the EC chair report.

Board Comments:

The Board and staff discussed the candidate recommendations for the Advisory Council (AC); the timeline expected for the AC review of the proposed refinery rules; how the candidates were nominated and recommended; concern about a loss of community input; and plans for initiating a proposed community council.

Public Comments:

Jed Holtzman, 350 Bay Area, addressed the Board in opposition to the proposed appointees due to his perception of a lack of diversity of backgrounds and experiences on the AC; to note the absence of interviews by the Personnel Committee; and to request the appointments be delayed for the purpose of conducting interviews.

Greg Karras, CBE, addressed the Board to echo the comments of Mr. Holtzman; to ask the Board what the charge or mission of the AC; and to question the qualifications of the nominees.

Board Comments (continued):

The Board and staff discussed the recommendation on the AC and the expected benefits of empaneling the new Body; the viability of adding an environmental justice representative to the AC panel; and the commendable recommendation to empanel three health experts.

Board Action:

Director Canepa made a motion, seconded by Gioia, to approve the recommendations of the EC with direction to staff to follow up on the addition of an environmental justice seat to the AC.

**13. Report of the AHBOC Meeting of September 23, 2015 (continued)**

Board Comments: None.

Public Comments: No requests received.

Board Action: None; receive and file.

**14. Report of the EC Meeting of September 23, 2015 (continued)**

Board Action (continued):

The motion carried by the following vote of the Board:

AYES: Barrett, Canepa, Chavez, Fujioka, Gioia, Haggerty, Hudson, Kim, Kniss, Miley, Mitchoff, Pepper, Rice, Ross, Sinks, Spering, Wagenknecht and Zane.  
NOES: Avalos and Mar.  
ABSTAIN: None.  
ABSENT: Bates and Groom.

**CLOSED SESSION**

The Board adjourned to Closed Session at 12:07 p.m.

**15. EXISTING LITIGATION (Government Code (GOV) Section 54956.9(a)) [OUT OF ORDER AGENDA ITEM 16]**

Pursuant to GOV § 54956.9(a), the Board met in closed session with legal counsel to consider the following cases:

**Valero Refining Company – California v. Bay Area AQMD, et al.**, San Francisco County Superior Court, Case No. CPF-15-514407

**California Building Industry Association v. Bay Area AQMD**, Alameda County Superior Court, Case No. RG-10548693; California Court of Appeal, First Appellate District, Case No. A135335, California Supreme Court, Case No. S213478

**16. CONFERENCE WITH REAL PROPERTY NEGOTIATOR (GOV § 54956.8)  
[AGENDA ITEM 17]**

Pursuant to GOV § 54956.8, the Board met in closed session with real property negotiators to discuss the disposition and leaseback of real property as follows:

Property: 435 Bryant Street, San Francisco, CA

Air District Negotiators: Jack P. Broadbent, Executive Officer/APCO  
Damian Breen, Deputy APCO  
Tom Christian, Cushman & Wakefield  
Aaron Whitelock, Cushman & Wakefield

Negotiating Parties: Postcard Properties, Inc.  
Colliers International

Under Negotiation: Price and Terms

**OPEN SESSION**

The Board resumed Open Session at 12:29 p.m. with reportable action as follows:

16. Existing Litigation: No reportable action.

17. Conference with Real Property Negotiator: The Board authorized the purchase of property at 435 Bryant Street, San Francisco, CA, following the successful completion of the real estate transaction and due diligence process.

**17. Report of the Mobile Source Committee (MSC) Meeting of September 24, 2015 [Agenda Item 13]**

Vice-Chairperson Mar, with the concurrence of the Board, waived reading of the MSC chair report.

Board Comments: None.

Public Comments: No requests received.

Board Action:

Director Hudson made a motion to approve the recommendations of the MSC; and the motion was voted on by the Board as follows:

AYES: Barrett, Canepa, Fujioka, Gioia, Hudson, Kim, Kniss, Mar, Ross, Sinks and Wagenknecht.

NOES: None.

ABSTAIN: None.

ABSENT: Avalos, Bates, Chavez, Groom, Haggerty, Miley, Mitchoff, Pepper, Rice, Spring and Zane.

*Note: It was noted after the conclusion of the meeting that the Board did not have a quorum present at the time of the vote on the Report of the Mobile Source Committee and, as a result, the matter will be reagendaized for consideration by the Board at its meeting on October 21, 2015.*

**18. PUBLIC COMMENT ON NON-AGENDA MATTERS:** No requests received.

**19. BOARD MEMBERS' COMMENTS:** None.

**OTHER BUSINESS**

**20. Report of the Executive Officer/APCO:**

Mr. Broadbent announced that the U.S. Environmental Protection Agency released new ozone standards last week that result in the Bay Area being out of attainment and the promotion of Sean Gallagher, Clerk of the Boards.

**21. Chairperson's Report:** None.

**22. Time and Place of Next Meeting**

Wednesday, October 21, 2015, Bay Area Air Quality Management District Headquarters, 939 Ellis Street, San Francisco, California 94109 at 9:45 a.m.

**23. Adjournment:** The Board meeting adjourned at 12:32 p.m.

Sean Gallagher  
Clerk of the Boards

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 16, 2015

Re: Board Communications Received from October 7, 2015, through October 20, 2015

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

Copies of communications directed to the Board of Directors received by the Air District from October 7, 2015, through October 20, 2015, if any, will be at each Board Member's place at the October 21, 2015, Board meeting.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Vanessa Johnson  
Reviewed by: Maricela Martinez

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 7, 2015

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 Air District personnel who have traveled on out-of-state business.

The report covers the out-of-state business travel for the month of September 2015. 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 September 2015:

- Jack P. Broadbent, Executive Officer/APCO, attended Clean Environmental Regulators Roundtable in Antwerp, Belgium September 6, 2015 – September 10, 2015
- Jeff McKay, Deputy Air Pollution Control Officer, attended BIT's 5<sup>th</sup> Low Carbon Earth Summit in Xi'an, China September 21, 2016 – September 28, 2015

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 Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 9, 2015

Re: Notices of Violation Issued and Settlements in Excess of \$10,000 September 2015

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 Violation issued, and all settlements for amounts in excess of \$10,000 during the calendar month 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

Attachment 6A: Notices of Violation Issued

**NOTICES OF VIOLATION ISSUED**

The following Notice(s) of Violation were issued in September 2015:

<b>Alameda</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Intematix Corporation	B7638	Fremont	A48969A	9/11/15	2-1-307	Excedance usuage limit
Russell City Energy Co, LLC	B8136	Hayward	A50218A	9/22/15	2-1-307	PSD PC #23763 Pt 59 & 60 >39.3 metric ton CO2E
Valley Crest Landscape	J4245	Pleasanton	A35661A	9/14/15	CCR	10 minutes idling

<b>Contra Costa</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Contra Costa Water District Ralph D Bollman WTP	B0929	Concord	A53988A	9/15/15	2-1-307	Exceed run hour limit (20 hours)
NRG Delta, LLC	A0012	Pittsburg	A54071A	9/1/15	9-11-309	9-11-309.1 NOX Excess emission
SFPP, L P	A4022	Concord	A54219A	9/2/15	8-5-305	Crack observed in pump wall above back nozzle
Shell Martinez Refinery	A0011	Martinez	A53887A	9/24/15	9-1-307	>250 PPM 50 clock hr Av (06V33)
Sierra Pacific Properties	E1970	Concord	A53989A	9/23/15	2-1-302	unpermitted backup engines (4)
Systron Donner	A6093	Concord	A53987A	9/10/15	2-1-307	exceeded 12 month microstrip usage (20 gal)



ATTACHMENT: 6A

Tesoro Refining & Marketing Company LLC	B2758	Martinez	A55530A	9/24/15	8-8-302.3	S# 819- Leaking hatches; >500 ppm after 7 days
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<b>San Mateo</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
USS Cal Builders (construction company)	X4223	South San Francisco	A53967A	9/3/15	11-2-401.3	failure to notify district of demolition

<b>Santa Clara</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Mission Power Coating, Inc	A1524	Gilroy	A54178A	9/3/15	2-1-301	4500 cubic foot permanent sandblast booth that required a permit to operate (2-1-301 & 302)
Mission Power Coating, Inc	A1524	Gilroy	A54178B	9/3/15	2-1-302	4500 cubic foot permanent sandblast booth that required a permit to operate (2-1-301 & 302)
Mission Power Coating, Inc	A1524	Gilroy	A54179A	9/3/15	8-19-321	use of a non-complying lacquer thinner for surface prep (8-19-321) and for no coating records (8-19-501)
Mission Power Coating, Inc	A1524	Gilroy	A54179B	9/3/15	8-19-501	use of a non-complying lacquer thinner for surface prep (8-19-321) and for no coating records (8-19-501)
Owens Corning Insulating Systems, LLC	A0041	Santa Clara	A51387A	9/2/15	2-6-307	2-3-307
Zero Waste Energy Development Company, LLC	E1277	San Jose	A54135A	9/2/15	2-1-307	Failure to maintain temperature at the flare

<b>District Wide</b>						
<b>Site Name</b>	<b>Site #</b>	<b>City</b>	<b>NOV #</b>	<b>Issuance Date</b>	<b>Regulation</b>	<b>Comments</b>
Toro Petroleum	J0257	Salinas	A54280A	9/15/15	8-33-304	8-33-304.6 CT# 85729, failure to meet year round decay rate
Thomson & Harvey	X5407	Santa Maria	A54279A	9/15/15	8-33-304	8-33-304.7 ST#16020, failure to maintain cargo tank supplied vapor return adapter leak free
Henner Tank Lines	X5403	Winters	A54278A	9/15/15	8-33-304	8-33-304.7 ST#16019, failure to maintain cargo tank supplied vapor return adapter leak free
KAG West, LLC	N1032	West Sacramento	A54281A	9/15/15	8-33-304	8-33-304.6 CT#201366, failure to meet year round decay rate

### **SETTLEMENTS FOR \$10,000 OR MORE REACHED**

There was 1 settlement(s) for \$10,000 or more completed in September 2015.

- 1) On September 11, 2015, the District reached settlement with Plains Products Terminal, LLC for \$10,000, regarding the allegations contained in the following 1 Notice of Violation:

<b>NOV #</b>	<b>Issuance Date</b>	<b>Occurrence Date</b>	<b>Regulation</b>	<b>Comments from Enforcement</b>
A53983	3/27/15	3/12/15	8-8-302.3	Not vapor tight (>500 ppm)

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 9, 2015

Re: Participation in Year Five of the California Goods Movement Bond Program

RECOMMENDED ACTION

Recommend the Board of Directors:

1. Adopt a resolution in support of the Air District's application for Year 5 Goods Movement Bond Program (I-Bond) funding;
2. Authorize the Executive Officer/APCO to enter into agreements with the California Air Resources Board (ARB) related to the acceptance of I-Bond funding; and
3. Authorize the Executive Officer/APCO to appropriate I-Bond funding and to enter into agreements with eligible applicants for projects ranked and approved by the ARB.

BACKGROUND

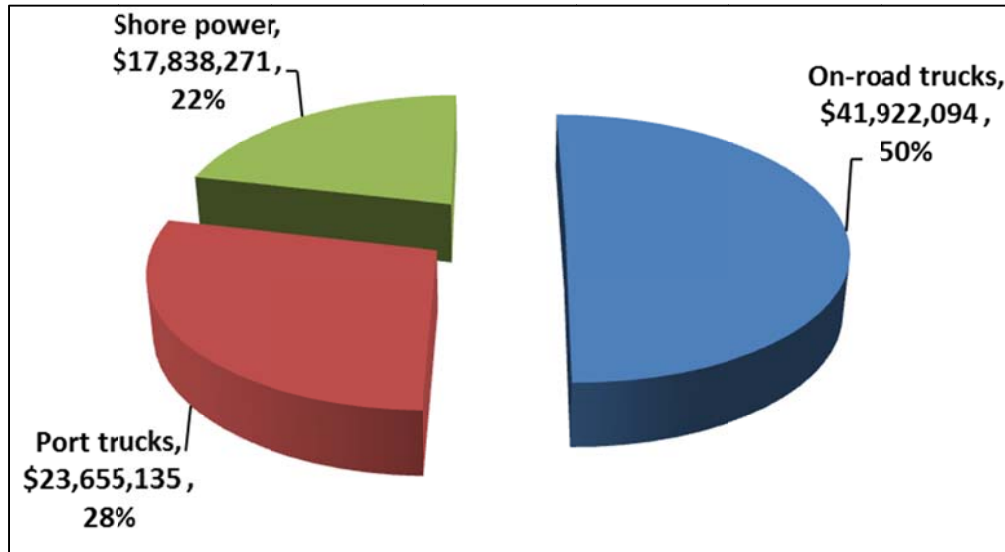
In November 2006, California voters authorized the Legislature to appropriate \$1 billion in bond funding to quickly reduce air pollution emissions and health risk from freight movement along California's priority trade corridors. On February 28, 2008, the California Air Resources Board (ARB) approved 14% of the total local agency funding from projected bond sales for emission reduction projects in the Bay Area trade corridor.

The Air District has administered the Goods Movement Bond Program (I-Bond) in the Bay Area for the first four funding cycles. To date the Air District has expended over \$80 million in I-Bond funding for projects to:

- Retrofit 1,400 port trucks,
- Replace over 560 port trucks,
- Retrofit 65 on-road trucks,
- Replace 850 on-road trucks (*still in progress*), and
- Electrify 12 berths at the Port of Oakland (*shore power*).

Collectively, these projects have reduced over 238 tons of Particulate Matter 2.5 (PM<sub>2.5</sub>), and 9,347 tons of Nitrogen Oxides (NO<sub>x</sub>). Figure 1 shows the distribution of the Air District's I-Bond expenditures by project equipment category over the first four funding cycles.

**Figure 1 - Air District I-Bond expenditures by equipment category**



As part of this report staff will update the Committee on the Air District's Year 5 I-Bond application and request Board of Directors adoption of a resolution in support of this application and program implementation.

## DISCUSSION

On July 6, 2015, ARB issued a Notice of Funding Availability for the Year 5 (Fiscal Year 2015-16) I-Bond program. As part of this announcement, ARB identified eligible project equipment categories and the following priorities for these funds:

1. Truck projects to upgrade equipment to zero-emission and hybrid vehicles capable of zero emission miles, as well as vehicles certified to the lowest optional NOx standard of 0.02g/bhp-hr. These projects will receive priority and enhanced funding, which will provide an added incentive to applicants and promote the transition to the cleanest technology. These projects will continue to reduce the health risk in communities statewide, especially those near freeways and freight facilities.
2. Truck projects to assist small truck fleets with upgrading to cleaner technology that can still achieve early or extra emission reductions relative to the ARB Truck & Bus Regulation.
3. Projects to upgrade trucks, transport refrigeration units, commercial harbor craft, ships at berth, and cargo handling to zero and near-zero emission equipment through replacement, repower, and retrofit, as applicable. A broader deployment of these technologies will be needed in all trade corridors to attain health-based air quality standards as well as attain future long-term greenhouse gas reduction goals in all trade corridors.
4. Locomotive projects based on engines meeting the most stringent national emission standards (Tier 4). These projects will further reduce the health risks near rail yards.

Air District staff held a public meeting on July 27, 2015, to gather input on ideas for the Bay Area trade corridor's Year 5 I-Bond program funding objectives. Nineteen stakeholders participated in the meeting including equipment owners, vendors, and lenders. The feedback received from the participants was taken into consideration as staff finalized the Air District's application. The application requested \$47 million in Year 5 I-Bond funding focused on the following project equipment categories:

- **Heavy-duty diesel trucks:** \$24 million for heavy-duty diesel truck projects. The requested amount includes project and administrative funding, and will upgrade approximately 507 trucks. These funds are estimated to reduce 3,577 tons of NOx over the lives of the funded projects.
- **Locomotives and rail yards:** \$15 million for locomotive and rail yard projects. The requested amount includes project and administrative funding and will replace approximately seven locomotives. These funds are estimated to reduce 64 tons of PM and 1,062 tons of NOx over the lives of the funded projects.
- **Transportation refrigeration units (TRU):** \$3 million for projects that replace TRUs. The requested amount includes project and administrative funding and will upgrade approximately 66 TRUs. These funds are estimated to reduce 3 tons of PM and 106 tons of NOx over the lives of the funded projects.
- **Ships at berth & cargo handling equipment:** \$5 million for Cargo Handling Equipment projects. The requested amount includes project and administrative funding and will upgrade approximately four pieces of cargo-handling equipment. These funds are estimated to reduce 3 tons of PM and 296 tons of NOx over the lives of the funded projects.

The Air District submitted its application to ARB on August 4, 2015. ARB staff has indicated that the distribution of Year 5 funding amongst the project equipment categories may be adjusted from the originally approved amounts as program interest/demand dictates. ARB expects to have funding from bond sales to award up to \$240 million for new projects to local and state agencies.

At a public workshop on August 26, 2015, ARB staff presented preliminary staff recommendations which included a \$48.1 million allocation to the Air District for the Year 5 I-Bond program. This amount is a combination of new funds, and approximately \$8 million remaining from previous Air District I-Bond grant awards. The preliminary ARB recommendations indicate the project equipment category funding amounts will be distributed as requested in the Air District's application (as shown above) with the exception of the truck project funding which will increase from \$24 million to \$25.1 million. This funding recommendation will be considered by the ARB Board at a public hearing on September 24, 2015.

A required element of the I-Bond application is the submittal of an Air District Board resolution for program participation and implementation. Staff requests the Committee recommend the Board of Directors adopt the attached resolution in support of the Air District application for I-Bond funding. Additionally, staff recommends the Committee request the Board of Directors authorize the Executive Officer/APCO to enter into agreements with ARB to accept I-Bond funding, and enter into agreements with eligible applicants for projects ranked and approved by

the ARB. Staff will update the Committee on the status of this program throughout implementation.

BUDGET CONSIDERATION / FINANCIAL IMPACT

None. Through the I-Bond program the Air District distributes “pass-through” funds to public agencies and private entities on a reimbursement basis. Administrative costs for the program are provided by the funding source.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Anthony Fournier  
Reviewed by: Karen Schkolnick

Attachment 1: Resolution for Accepting Goods Movement Emission Reduction Program Funds  
From the California Air Resources Board

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

**RESOLUTION No. 2015 -**

**A Resolution of the Board of Directors of the Bay Area Air Quality Management  
Accepting Goods Movement Emission Reduction Program Funds  
From the California Air Resources Board**

WHEREAS, under Government Code, Section 8879.23, subdivision (c), paragraph (2), funds are appropriated to the California Air Resources Board (ARB) for allocation on a competitive basis for projects that are shown to achieve the greatest emission reductions from activities related to the movement of freight along California's trade corridors;

WHEREAS, California Health and Safety Code, Section 39625 et seq. empowers ARB to allocate Goods Movement Emission Reduction Program ("Program") funds to local public entities, such as the Bay Area Air Quality Management District (District), to provide financial incentives to reduce emissions associated with the movement of freight along California's trade corridors;

WHEREAS, ARB has awarded the first four installments of Program funds to local agencies, which are currently implementing emission reduction projects under the Program;

WHEREAS, under the State's current fiscal policies, ARB's ability to award the subsequent Program funding is dependent on the availability of cash from bond sales or other State financing mechanisms;

WHEREAS, ARB expects to have funding from bond sales to award up to \$240 million for new projects to local and state agencies at a public ARB Board hearing in September 2015;

WHEREAS, in July 2015, ARB issued a notice of funding availability inviting local and state agencies to submit applications for funding for new projects;

WHEREAS, the District wishes to apply for funds for new projects pursuant to the ARB notice of funding availability;

WHEREAS, ARB requires each public agency to include in its application a signed or proposed resolution authorizing receipt of Program funding;

NOW, THEREFORE, BE IT RESOLVED, the Board of Directors hereby authorizes the District to enter into an agreement with ARB, accept funds, and provide matching funds under the fiduciary control of the District that are identified in a District project funding demonstration.

BE IT FURTHER RESOLVED, the Executive Officer is the District representative authorized to sign and submit the local agency project application.

BE IT FURTHER RESOLVED, the Executive Officer is the District representative authorized to execute the District's project grant agreement between ARB and the District.

BE IT FURTHER RESOLVED, the ARB approval of a competitively ranked equipment project list indicates the projects selected for funding and a backup list of eligible projects or for undersubscribed truck solicitations, the approval of a list of eligible projects.

BE IT FURTHER RESOLVED, the Executive Officer is the District representative authorized to execute an equipment project contract between the District and equipment owner and delegate signature authorization to others.

BE IT FURTHER RESOLVED, the Executive Officer is the District representative authorized to sign Grant Expenditure Requests and delegate signature authorization to others.

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 \_\_\_\_\_, 2015, by the following vote of the Board:

AYES:

NOES:

ABSENT:

\_\_\_\_\_  
Carole Groom  
Chairperson of the Board of Directors

ATTEST:

\_\_\_\_\_  
Liz Kniss  
Secretary of the Board of Directors



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 9, 2015

Re: Allocation to Support Greenhouse Gas Emission Reduction Fund Projects

**RECOMMENDED ACTION**

Recommend the Board of Directors:

1. Adopt a resolution in support of the Air District's application for California Air Resources Board (ARB) Low Carbon Transportation Greenhouse Gas Emission Reduction Funds (GGRF);
2. Allocate up to \$4.65 million in Transportation Fund for Clean Air (TFCA) funding as match for GGRF projects using a project cost-effectiveness of \$500,000 per ton of emissions reduced;
3. Authorize the Executive Officer/APCO to enter into agreements with the ARB and partners related to the acceptance of GGRF funds; and
4. Authorize the Executive Officer/APCO to appropriate GGRF funds and to enter into agreements with project participants.

**BACKGROUND**

In 2012, the Legislature passed and Governor Brown signed into law three bills – AB 1532 (Pérez), SB 535 (De León), and SB 1018 (Budget and Fiscal Review Committee) – that established the Low Carbon Transportation Greenhouse Gas Emission Reduction Fund (GGRF). This fund receives Cap-and-Trade auction proceeds and provides the framework for how the auction proceeds will be administered in furtherance of the purposes of AB 32, including supporting long-term, transformative efforts to improve public health and develop a clean energy economy. The suite of implementing legislation offers direction for investing a portion of the auction proceeds to benefit disadvantaged communities identified by the CalEnviroScreen model developed by the California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment. Specifically, SB 535 directs at least 25% of GGRF funding to projects that benefit disadvantaged communities and at least 10% to projects located in disadvantaged communities.

In June 2014, the California Air Resources Board (ARB) approved the Fiscal Year (FY) 2014-15 Funding Plan for the Air Quality Improvement Program (AQIP) and GGRF Investments,

providing up to \$222 million for programs and projects. Of the \$222 million in the plan, up to \$50 million was identified for advanced technology freight demonstration projects.

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. These registration fees are allocated through the Air District's Transportation Fund for Clean Air (TFCA) program. The statutory authority and requirements for the TFCA program are set forth in California Health and Safety Code Sections 44241 and 44242. Each year, the Air District's Board allocates funding and adopts policies and evaluation criteria that govern expenditure of TFCA funding. Sixty percent of TFCA funds are awarded directly by the Air District to eligible projects and programs implemented directly by the Air District (e.g., Spare the Air, Plug-in Electric Vehicle Program) and to a program referred to as the TFCA Regional Fund.

As part of this report staff will update the Committee on the ARB Low Carbon Transportation GGRF solicitations and request the Air District's Board of Directors adopt a resolution in support of these applications.

## DISCUSSION

On June 23, 2015 ARB issued solicitation announcements for \$47.3 million in Advanced Technology freight demonstration projects as part of their FY2014-15 Funding Plan. Funding for these solicitations is open to California-based public agencies, and California-based non-profits. The demonstration of these technologies is an important step in reaching the state's air quality and GHG reduction goals, and reducing exposure to air toxics in disadvantaged communities. The solicitations focused on advanced freight movement technologies in the two areas described below.

### ***1. Zero-Emission Drayage Truck Demonstration Project***

This solicitation provides up to \$23,658,500 for projects that reduce greenhouse gases, criteria pollutants, and toxic air contaminant emissions in disadvantaged communities. Projects funded under this solicitation will demonstrate full zero-emission drayage trucks, and drayage trucks that offer zero-emission miles (near zero-emission) by employing on-board range extending internal combustion engines or other technologies.

Staff has been meeting with potential project stakeholders (technology developers, trucking companies, local agencies, other air districts, etc.) over the past year to research developing technologies and define the scope of a demonstration project. The Air District, in collaboration with other air districts partners, plans to submit a joint proposal to ARB for these funds by September 24, 2015. This project, if selected, would demonstrate various zero and near-zero emission technologies on trucks primarily serving the ports of Oakland, Los Angeles, and Long Beach.

In the Bay Area, the Air District is proposing to work with local/regional trucking companies to deploy battery-electric trucks in local service around the Port of Oakland. The project will also demonstrate hybrid-electric trucks on longer regional routes between Sacramento and/or the San Joaquin Valley and the Port of Oakland.

## ***2. Multi-Source Facility Demonstration Project***

This solicitation provides up to \$23,658,500 for projects that reduce greenhouse gases, criteria pollutants, and toxic air contaminant emissions in disadvantaged communities. This project is intended to demonstrate multiple types of equipment and vehicles employing zero and near zero-emission technologies at one freight facility located within, or with the project directly benefitting, disadvantaged communities. Examples of multi-source facilities include distribution centers, warehouses, ports, intermodal rail yards, or other similar freight support facilities.

Similar to the drayage solicitation, staff has been meeting with various stakeholders over the past year to develop a proposal for the multi-source demonstration project. The Air District will submit a proposal to demonstrate various advanced technologies at the Port of Oakland to ARB by September 24, 2015.

### ***Air District Commitment***

Each of these solicitations requires the applicants to provide a minimum 25% match, of which at least 10% must be a cash match and the remaining 15% can be in-kind. Staff requests the committee allocate up to \$4.65 million in TFCA funds as cash match for these proposals. The TFCA funds will be reallocated from the balance (\$3.15 million) of a \$5 million allocation made by the Air District Board of Directors on March 19, 2014, to supplement the Year 4 I-Bond truck program, and \$1.5 million from the \$14 million allocated by the Board on May 6, 2015, for electric vehicle projects under the FY 2015-2016, TFCA funding cycle. The Air District and its project partners will also contribute in-kind match in the form of staff time, labor, and other resources.

Staff is proposing to evaluate these projects using a \$500,000 per ton of emissions reduced cost-effectiveness limit. The proposed projects are sponsored by major Original Equipment Manufacturers (OEMs) and represent a path to commercialization for these technologies that could not be accelerated using TFCA funding alone. Should these project proposals be approved, the TFCA allocation will leverage partner resources in excess of \$40 million.

A required element of the ARB applications is the submittal of an Air District Board resolution for program participation and implementation. Staff requests the Committee recommend the Board of Directors adopt the attached resolution in support of the Air District's GGRF proposals to: comply with the requirements of the Advanced Technology Demonstrations, accept Low Carbon GGRF funds, and allocate match funding. Additionally, staff recommends the Committee request the Board of Directors authorize the Executive Officer/APCO to enter into agreements with ARB and partner agencies to accept GGRF funding, and enter into agreements with project partners to implement these projects.

### **BUDGET CONSIDERATION / FINANCIAL IMPACT**

None. Administrative costs for the program are provided by the funding source.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Anthony Fournier  
Reviewed by: Karen Schkolnick

Attachment 1: Resolution committing matching funds in support of applications to the California Air Resources Board for Low Carbon Transportation Greenhouse Gas Emission Reduction Fund projects

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

**RESOLUTION NO. 2015-\_\_\_\_\_**

**A Resolution of the Board of Directors of the Bay Area Air Quality Management District committing matching funds in support of applications to the California Air Resources Board for Low Carbon Transportation Greenhouse Gas Emission Reduction Fund projects**

WHEREAS, AB 118, the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007 (Statutes of 2007, Chapter 750) created the Air Quality Improvement Program (AQIP), an incentive program administered by the California Air Resources Board (ARB);

WHEREAS, AB 1532 (Statutes of 2012, Chapter 807), SB 535 (Statutes of 2012, Chapter 830), and SB 1018 (Statutes of 2012, Chapter 39) established the Greenhouse Gas Emission Reduction Fund (GGRF) to receive Cap-and-Trade auction proceeds and provided a framework for administering auction proceeds in furtherance of the purposes of AB 32;

WHEREAS, in 2014, the California Legislature appropriated nearly \$200 million in GGRF monies to establish a Low Carbon Transportation GGRF program that ARB is implementing in coordination with the AQIP AB 118 programs through the ARB Fiscal Year 2014-15 Funding Plan for AQIP and Low Carbon Transportation GGRF Investments;

WHEREAS, the ARB Low Carbon Transportation GGRF solicitations under the Fiscal Year 2014-15 Funding Plan require each applicant to provide matching funds in support of their applications;

WHEREAS, in 1990, the California Legislature authorized the Bay Area Air Quality Management District (District) to impose a \$4 surcharge on motor vehicles registered within the Bay Area to fund projects that reduce on-road motor vehicle emissions;

WHEREAS, the Legislature has authorized, through the adoption and amendment of Health and Safety Code sections 44241, the expenditure of local motor vehicle surcharge revenues for projects that reduce vehicle emissions, and the District funds such projects through its Transportation Fund for Clean Air Program (TFCA);

WHEREAS, the District submitted applications to ARB in September 2015 to implement FY 2014-15 Low Carbon Transportation GGRF projects, and proposed to commit matching funds if awarded funding from ARB;

WHEREAS, ARB requires Low Carbon Transportation GGRF applicants to submit a Resolution to commit matching funds, accept funding from ARB, and implement projects in accordance with the requirements established by ARB;

NOW, THEREFORE, BE IT RESOLVED, the Board of Directors hereby approves the District's acceptance of ARB GGRF funds, and commits the District to comply with the ARB Low Carbon Transportation GGRF project requirements if awarded funding.

BE IT FURTHER RESOLVED, the Board of Directors authorizes the Executive Officer/Air Pollution Control Officer to provide the required matching funds in an amount up to \$4.65 million, by allocating local TFCA motor vehicle surcharge revenues.

BE IT FURTHER RESOLVED, the Executive Officer/Air Pollution Control Officer is hereby authorized and empowered to execute on behalf of the District grant agreements with ARB and all other necessary documents to implement and carry out the purposes of this resolution.

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 \_\_\_\_\_, 2015, by the following vote of the Board:

AYES:

NOES:

ABSENT:

\_\_\_\_\_  
Carole Groom  
Chairperson of the Board of Directors

ATTEST:

\_\_\_\_\_  
Liz Kniss  
Secretary of the Board of Directors

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 7, 2015

Re: Consider Authorization for a Contract Extension to Technical and Business Systems and Execution of a Purchase Order in Excess of \$70,000 Pursuant to Administrative Code Division II Fiscal Policies and Procedures, Section 4.3 Contract Limitations, for Continued Operation of the BioWatch Monitoring Network

**RECOMMENDED ACTION**

The Board of Directors will consider authorizing the Executive Officer/APCO to extend the current contract for two years and issue a Purchase Order for Fiscal Year Ending (FYE) 2016 of \$1,106,386 for Technical and Business (T&B) Systems to continue operation and maintenance of the BioWatch monitoring network through June 30, 2017, as outlined in a grant from the Department of Homeland Security for the continued operation.

**DISCUSSION**

The BioWatch program began in February of 2003, with eight locations in the San Francisco area. In July of 2003, the network expanded to include 6 additional sites in the San Jose area. The operational demands of this network necessitated the use of a contractor and a Request for Quotation (RFQ) was sent to five qualified contractors. Staff received proposals from three contractors who responded to the RFQ. After a thorough evaluation, the contract was awarded to T&B Systems (Board of Directors Memo, Agenda Item 5E, dated August 26, 2003). In 2006, the network was again expanded to a total of 32 sites located throughout the Bay Area and additional grant funding was incorporated into the budget (Budget and Finance Committee, May 15, 2006; Agenda Item 5; Board of Directors, May 24, 2006, Agenda Item 9). The latest contract with T&B Systems was approved by the Board of Directors for a year period beginning July 1, 2014 (Board of Directors Meeting, September 3, 2014, Agenda Item 9).

The contract amendment under consideration would extend the current period through June 30, 2017. The Purchase Order under consideration will cover operation of the network through the end of the first year of the contract. A Purchase Order for the second year will be brought to the Board of Directors in 2016. Neither Purchase Order will exceed the amount of the grant award from the Department of Homeland Security.

BUDGET CONSIDERATION/FINANCIAL IMPACT

Funds for this Purchase Order are from a Homeland Security Grant that covers operation of the existing network and the associated Air District costs of administering the program. There will be no financial impact to the Air District's general revenue resources.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Eric Stevenson  
Reviewed by: Jean Roggenkamp



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 15, 2015

Re: Report of the Nominating Committee Meeting of October 21, 2015

RECOMMENDED ACTION

The Nominating Committee (Committee) may recommend Board of Directors' (Board) approval of Board Officers for:

- Chairperson;
- Vice Chairperson; and
- Secretary.

BACKGROUND

The Committee will meet on Wednesday, October 21, 2015 and consider the slate of Board Officers for the 2016 Term of Office.

Chairperson Groom will give an oral report of the meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Sean Gallagher  
Reviewed by: Maricela Martinez

Attachment: 10/21/15 – Nominating Committee Meeting Agenda #4

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Carole Groom and Members  
of the Nominating Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 14, 2015

Re: Consideration and Nomination of Board Officers for the Term of Office  
Commencing 2016

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RECOMMENDED ACTION

Consider recommending Board of Directors' approval of Board Officers for:

- Chairperson;
- Vice Chairperson; and
- Secretary

DISCUSSION

Air District Counsel, Brian Bunger has provided a memorandum addressed to Chairperson Carole Groom that is attached for discussion. The memorandum includes pertinent provisions from the Air District's Administrative Code and the Board of Directors' Operating Policies and Procedures. The memorandum also discusses the role of the Nominating Committee.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Vanessa Johnson  
Reviewed by: Maricela Martinez

Attachment 1: Criteria for Recommendation of Officers of the Board of Directors  
Attachment 2: Administrative Code – Selected Provisions Section 2 Board of Directors,  
Officers - Duties

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

**OFFICE OF DISTRICT COUNSEL**

**MEMORANDUM**

**DATE:** October 14, 2015

**TO:** Carole Groom, Chairperson  
and Members of the Nominating Committee of the Board of Directors

**FROM:** Brian C. Bunger  
District Counsel

**SUBJECT:** Criteria for Recommendation of Officers of the Board of Directors

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The function of the Nominating Committee is “to recommend to the Board the officers for each calendar year.” Bay Area Air Quality Management District Administrative Code (“Admin. Code”), Division I, Section 6.8. In order to assist with this function, this Memorandum discusses the criteria to be applied by the Nominating Committee in making its recommendations for officers to the Board.

The Administrative Code contains certain criteria that the Nominating Committee must follow in making its recommendation for officers of the Board.

First, “the Committee shall not be bound by a recommendation of a previous Nominating Committee.” Admin. Code, Div. I, § 6.8.

Second, “[t]he Committee need not follow a strict rule of rotation between supervisor and city members but may take into account their proportionate membership on the Board of Directors.” Admin Code, Div. I, § 6.8.

Third, Section 6.8 further requires that “the Committee shall take into account the provisions of Section I-2.7.” Admin. Code, Div. I, § 6.8.

Section 2.7 of Division I of the Administrative Code sets forth a policy of the Board to rotate the positions of the Chairperson, Vice Chairperson and Board Secretary among the members of the Board “in a manner to assure participation in the affairs of the District from a wide representation of the membership.” Admin. Code, Div. I § 2.7. In this regard, Section 2.7 provides that “[I]n making its recommendations, the Nominating Committee shall take into account such factors as representation by those members appointed by Boards of Supervisors, those members appointed by City selection committees, those members from large counties, and those from small counties.” Admin. Code, Div. I § 2.7.

## AGENDA 4 – ATTACHMENT 1

Thus, the Board has expressed a policy of rotating officer positions in order to ensure broad participation by all Board members in the affairs of the District. However, the Nominating Committee is not required to follow a strict rule of rotation between supervisor and city members. Nor is the Committee to be bound by the actions of any prior Nominating Committee. Finally, the Nominating Committee must take into account such factors as representation of supervisor and city members on the Board and the representation of members from large and small counties.

For your convenience, attached are copies of the pertinent sections of the District's Administrative Code.

**ADMINISTRATIVE CODE – SELECTED PROVISIONS**

**SECTION 2 BOARD OF DIRECTORS, OFFICERS - DUTIES**

**2.1 OFFICERS OF THE BOARD. (Revised 1/21/04)**

The presiding officer of the Board is the Chairperson of the Board of Directors. The Chairperson, Vice Chairperson and Secretary shall, no later than the first meeting in December of each year, be elected by the Board of Directors and assume office January 1, (effective January 1, 2005). The Chairperson shall preserve order and decorum at regular and special meetings of the Board. The Chairperson shall state each question, shall announce the decision, shall decide all questions of order subject to an appeal to the Board. The Chairperson shall vote on all questions, last in order of the roll, and shall sign all ordinances and resolutions adopted by the District Board while the Chairperson presides. (see Section II-4.3)

In the event that the Chairperson is unable, for whatever reason, to fulfill his or her one-year term of office, the Vice-Chairperson shall succeed the Chairperson and the Secretary shall succeed the Vice-Chairperson. Section 2.3 below shall determine the filling of the Secretary vacancy. In any event, no Board Officer shall serve more than three (3) years in any one Board office (Chairperson, Vice-Chairperson, or Secretary).

**2.2 CHAIRPERSON. (Revised 1/14/09)**

The Chairperson shall take the chair at the hour appointed for the meeting and call the District Board to order. In the absence of the Chairperson, the Vice-Chairperson shall call the Board to order and serve as temporary Chairperson. Upon arrival of the Chairperson, the Vice-Chairperson shall relinquish the chair upon the conclusion of the business then pending before the Board. In the absence, or self-determined inability to act, of the Chairperson, or the Vice-Chairperson when the Chairperson is absent, the Board Secretary shall call the Board to order and serve as temporary Chairperson. Upon arrival of the Chairperson or Vice-Chairperson, the Secretary shall relinquish the Chair upon the conclusion of the business then pending before the Board. In the absence, or self-determined inability to act, of the Chairperson, Vice Chairperson or Secretary, members of the Board of Directors shall, by an order on the Minutes, select one of their members to act as temporary Chairperson. Upon the arrival or resumption of ability to act, the Chairperson or Vice-Chairperson shall resume the Chair, upon the conclusion of the business then pending before the Board. It shall be the duty of the Chairperson to attend all meetings of the Bay Area Air Quality Management District Advisory Council.

**2.3 VICE CHAIRPERSON.**

If, for any reason, the Chairperson ceases to be a member of the Board, the Vice-Chairperson shall automatically assume the office of Chairperson and the Board Secretary shall automatically assume the office of Vice-Chairperson. If, for any reason, the Vice-Chairperson ceases to be a member of the Board, the Board Secretary shall automatically assume the office of Vice-Chairperson. In either eventuality, the Board Nominating Committee shall, upon the request of the Chairperson, make a recommendation at the Board meeting following such request to fill the office of Board Secretary. An election will then immediately be held for that purpose.

**2.4 BOARD SECRETARY.**

The Board Secretary shall be official custodian of the Seal of the District and of the official records of the District and shall perform such secretarial duties as may require execution by the Board of Directors. The Board Secretary may delegate any of these duties to the APCO, or to the Clerk of the Boards.

**2.5 MEETING ROLL CALL.**

Before proceeding with the business of the Board, the Clerk of the Boards shall call the roll of the members, and the names of those present shall be entered in the Minutes. The names of members who arrive after the initial roll call shall be noted in the Minutes at that stage of the Minutes.

**2.6 QUORUM.**

A majority of the members of the Board constitutes a quorum for the transaction of business, and may act for the Board.

**2.7 OFFICER ROTATION.**

It is intended that the positions of Chairperson, Vice Chairperson, and Board Secretary be rotated among the members in a manner to assure participation in the affairs of the District from a wide representation of the membership. In making its recommendations, the Nominating Committee shall take into account such factors as representation by those members appointed by Boards of Supervisors, those members appointed by City selection committees, those members from large counties, and those from small counties.

**SECTION 6 BOARD OF DIRECTORS, COMMITTEES**

**6.8 NOMINATING COMMITTEE. (Revised 10/4/95)**

The Nominating Committee will consist of the Chairperson of the Board, the past Chairperson of the Board and three (3) appointees of the Chairperson of the Board, or in the event the past Chairperson of the Board is no longer serving on the Board, four (4) appointees of the Chairperson of the Board. The Nominating Committee shall be appointed no later than the second Board Meeting in November of each year and shall serve until the appointment of a new Committee. It is the function of the Nominating Committee to recommend to the Board the officers for each calendar year. In making its recommendation, the Committee shall not be bound by a recommendation of a previous Nominating Committee. The Committee need not follow a strict rule of rotation between supervisor and city members but may take into account their proportionate membership on the Board of Directors. Additionally, the Committee shall take into account the provisions of Section I-2.7.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Carole Groom and Members  
of the Board of Directors

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 13, 2015

Re: Public Hearing to Receive Testimony and Consider Adoption of Proposed  
Amendments to Air District Regulation 6, Rule 3: Wood Burning Devices and  
Adoption of a Negative Declaration pursuant to the California Environmental Quality  
Act (CEQA)

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RECOMMENDED ACTION

Air District staff recommends the Board of Directors adopt proposed amendments to Regulation 6; Rule 3: Wood Burning Devices and the Negative Declaration pursuant to the California Environmental Quality Act (CEQA).

BACKGROUND

The Bay Area Air Quality Management District (“Air District”) proposes amendments to Regulation 6, Rule 3: Wood Burning Devices (“Rule 6-3”) to protect Bay Area residents from the public health impacts of fine particulates generated from burning wood or solid fuels as a source of primary or supplemental heat, or for ambiance. Wood-burning devices include fireplaces, fire pits, wood stoves, pellet stoves, and any other wood-fired heating device. There are an estimated 1.4 million fireplaces and wood-burning devices in the Bay Area; and in the winter, more than 30% of PM<sub>2.5</sub> air pollution is attributed to wood-burning. Although Rule 6-3 has successfully reduced wintertime PM<sub>2.5</sub> emissions regionally by about 2,660 tons per year (tpy), wood smoke continues to cause unhealthy air, to exceed the PM<sub>2.5</sub> federal health standard, and negatively impact local air quality.

DISCUSSION

The United States Environmental Protection Agency (EPA) under the authority of the Clean Air Act (42 U.S.C. 7401 et seq.), established the National Ambient Air Quality Standards (NAAQS) to protect human health with a margin of safety from adverse health impacts due to exposure to air pollution. The proposed amendments to Rule 6-3 would help achieve state and federal ambient air quality standards for PM<sub>2.5</sub> in the Bay Area. It is estimated that the Air District’s proposed amendments would reduce PM<sub>2.5</sub> emissions by 321 tpy and further improve local and regional air quality in the Bay Area.

The proposed amendments to the rule will address the following:

- Restrict availability of the “sole source of heat” exemption by requiring that residences seeking to use the exemption to replace or upgrade any existing non-certified wood-burning device or fireplace to an EPA-certified wood-burning device, and register that EPA-certified device with the Air District;
- Provide a temporary exemption for non-functional, permanently installed heaters;
- Provide an exemption for loss of natural gas and/or electric power;
- Adopt EPA emission requirements for the manufacturing, sale or resale of wood-burning devices;
- Require a proactive and informative disclosure describing the negative health impacts of PM<sub>2.5</sub> when selling, leasing, or renting properties with a wood-burning device;
- Require rental properties in natural gas service areas to have a permanently installed form of heat that does not burn solid fuel;
- Limit installations in new building construction to only non-wood burning devices;
- Require the replacement of an existing uncertified wood-burning device with a clean burning device if a fireplace or chimney remodel exceeds \$15,000 and requires a building permit; and,
- Further restrict visible emissions from wood-burning devices to be consistent with other sources of visible emissions addressed by Regulation 6, Rule 1: General Requirements.

Potential environmental impacts from the proposed rule amendments were reviewed by the Air District’s environmental consultant, Environmental Audit, Inc. An evaluation of the proposed amendments conclude that there would be no significant adverse environmental impact, and as a result, staff proposes the adoption of a California Environmental Quality Act (CEQA) Negative Declaration.

A socioeconomic analysis on the proposed rule amendments was conducted by Bay Area Economics. The findings of that analysis indicate there are no significant economic impacts resulting from changes on the household, landlord or renters to transition to cleaner heating options; however with strengthened rule requirements that further reduce wood-burning by 20% in the Bay Area, there may be a significant economic burden to small businesses selling wood.

#### RULE DEVELOPMENT PROCESS

In preparing these proposed amendments, Air District staff reviewed similar regulations in other air districts and consulted with interested stakeholders such as the Hearth, Patio and Barbecue Association; Bay Area Realtor Associations; California Apartment Association; American Lung Association; Families for Clean Air; and any interested members of the general public. Nine public workshops were conducted in March and April 2015 to discuss the proposed amendments to the rule and comments from those meetings have been incorporated into this draft proposal. An interim set of proposed amendments and staff report were sent to interested parties in late August, and additional comments were incorporated into the proposed amendments to Rule 6-3. A public hearing notice; proposed amendments to Regulation 6, Rule 3; the CEQA initial study and Negative Declaration; a socioeconomic analysis; and a staff report are available by request



and have been posted on the District's website at <http://www.baaqmd.gov/rules-and-compliance/rule-development/meetings-and-public-hearings>.

#### BUDGET CONSIDERATIONS/FINANCIAL IMPACTS

Implementation of the real estate disclosure, requirements for new construction, rental property requirements in natural gas service areas, and fireplace/chimney remodel provisions will require incremental District resources for outreach to the affected parties. EPA certified wood burning device registration program can be developed with existing resources, and are expected to need additional resources during initial registration, but reduced resources required in the long term.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Tracy Lee  
Reviewed by: Wayne Kino

Attachments: 11A: Draft: Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices  
11B: Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices Staff Report  
11C: Socio-Economic Impact Study of Proposed Amendments to Regulation 6, Rule 3, Wood Burning Devices  
11D: Initial Study/Negative Declaration for the Bay Area Air Quality Management District, Regulation 6, Rule 3: Wood Burning Devices

Correction to *Non-Functional, Permanently Installed Heater Exemption*

An administrative error was discovered in the proposed effective date of the *Non-functional, Permanently Installed Heater Exemption*. The effective date has been corrected from November 1, 2016 to November 1, 2015 in Section 111 of the draft rule.

**REGULATION 6  
PARTICULATE MATTER AND VISIBLE EMISSIONS  
RULE 3  
WOOD-BURNING DEVICES  
INDEX**

**6-3-100 GENERAL**

- 6-3-101 Description
- 6-3-110 Limited Exemption, ~~Natural Gas Service Unavailability~~ Sole Source of Heat
- 6-3-111 Limited Exemption, ~~Electrical Power Service Unavailability~~ Non-functional, Permanently Installed Heater
- 6-3-112 Limited Exemption, ~~Only Source of Space Heat~~, Loss of Natural Gas and/or Electric Power

**6-3-200 DEFINITIONS**

- 6-3-201 Alternate Form of Heat
- 6-3-20~~1~~2 APCO
- 6-3-20~~2~~3 Builder
- ~~6-3-203 Curtailment Period~~
- 6-3-204 Electric-~~powered~~ Heating Device
- 6-3-205 EPA
- 6-3-206 EPA Certified Wood Heaters
- 6-3-20~~5~~7 Fireplace
- 6-3-20~~6~~8 Garbage
- 6-3-20~~7~~9 Gas-fueled Heating Device
- ~~6-3-208 Low Mass Fireplace~~
- ~~6-3-209 Masonry Heater~~
- 6-3-210 Insert
- 6-3-211 Mandatory Burn Ban
- 6-3-212 Manufacturer
- 6-3-213 New Building Construction
- 6-3-21~~0~~4 Pellet-fueled ~~Device~~ Wood Heater
- 6-3-215 Permanently Installed
- 6-3-216 Particulate Matter
- 6-3-217 PM<sub>2.5</sub>
- 6-3-21~~8~~ Real Property
- 6-3-219 Remodel
- 6-3-220 Retailer
- 6-3-2~~1~~21 Ringelmann Chart
- 6-3-2~~1~~322 Seasoned Wood
- 6-3-2~~1~~423 Solid Fuel
- 6-3-2~~1~~524 Treated Wood
- ~~6-3-216 U.S. EPA Phase II Certified Device~~
- 6-3-225 Uncertified Wood Heater
- 6-3-2~~1~~726 Visible Emissions
- 6-3-227 Winter Spare the Air Alert
- 6-3-228 Winter Spare the Air Season
- 6-3-229 Wood Heater
- 6-3-2~~1~~830 Wood-~~b~~Burning Device

**6-3-300 STANDARDS**

- 6-3-301 ~~Solid Fuel Burning Curtailment~~ Mandatory Burn Ban

- 6-3-302 Requirements for Wood Heater Manufacturers and Retailers
- 6-3-303 Sale, Resale, Transfer or Installation of Wood-Burning Devices
- 6-3-304 Disclosure Requirements for Real Property
- 6-3-305 Requirements for Rental Properties
- 6-3-306 Requirements for New Building Construction
- 6-3-307 Requirements for Remodeling a Fireplace or Chimney
- 6-3-30~~2~~8 Visible Emissions Limitation
- ~~6-3-303~~ Criteria for Sale, Resale or Installation of Wood-burning Devices
- ~~6-3-304~~ Criteria for Wood-burning Devices in New Building Construction
- 6-3-30~~5~~9 Prohibition Against Burning Garbage, Non-Seasoned Wood or Certain Materials
- 6-3-30~~6~~10 Requirements for Sale of Wood

**6-3-400 ADMINISTRATIVE REQUIREMENTS**

- ~~6-3-401~~ Verification of Violation
- 6-3-40~~2~~1 Device Sale or Installation, Public Awareness Information
- 6-3-40~~3~~2 Device Manufacturer's Certification or Proof of Equivalency
- 6-3-40~~4~~3 Labeling for Solid Fuel or Wood Sale
- 6-3-404 Registration of EPA Certified Wood Heaters
- 6-3-405 Registration Renewal

**6-3-500 MONITORING AND RECORDS**

- 6-3-501 Burden of Proof
- 6-3-502 Proof of Certification or Equivalency

**6-3-600 MANUAL OF PROCEDURES**

- 6-3-601 Determination of Visible Emissions
- 6-3-602 Determination of Moisture Content
- 6-3-603 Determination of EPA Certification or Demonstration of Equivalency

**REGULATION 6**  
**PARTICULATE MATTER AND VISIBLE EMISSIONS**  
**RULE 3**  
**WOOD-BURNING DEVICES**

(Adopted July 9, 2008)

**6-3-100 GENERAL**

**6-3-101 Description:** The purpose of this rule is to limit emissions of particulate matter and visible emissions from wood-burning devices used for primary heat, supplemental heat or ambiance.

**6-3-110 ~~Natural Gas Service Unavailability:~~** ~~The requirement of Section 6-3-301 shall not apply to any person who operates a wood-burning device in an area where natural gas service is not available (which includes temporary service outages), as determined by gas utility service to an area or household. A person may qualify for this exemption even though propane fuel is available for space heating purposes.~~

**Limited Exemption, Sole Source of Heat:** Until October 31, 2016, the requirements of Section 6-3-301 shall not apply to any person whose sole source of heat is a wood-burning device.

**110.1** Effective November 1, 2016, the requirements of Section 6-3-301 shall not apply to any person whose sole source of heat is an EPA certified wood-burning device that is registered with the District per the requirements of Sections 6-3-404 and 405 and who does not have available to them a permanently-installed natural gas, propane or electric heating device. Qualification for exemption is subject to verification.

**110.2** Effective November 1, 2018, rental properties subject to Section 6-3-305 located in areas with natural gas service no longer qualify for exemption in Section 6-3-110.1.

**6-3-111 ~~Limited Exemption, Electrical Power Service Unavailability:~~** ~~The requirements of Section 6-3-301 shall not apply to any person in an area where electrical power service is not available (which includes temporary service outages), as determined by electrical utility service to an area or household.~~

**Limited Exemption, Non-functional, Permanently Installed Heater:** Effective November 1, 2015, the requirement of Section 6-3-301 shall not apply to any person whose only non-wood-burning, permanently-installed source of heat is non-functional and requires repair to resume operation. A dwelling may qualify for a 30-day exemption if there is no alternate form of heat and the non-functional heater is repaired to resume function within 30 days. Qualification for this exemption is subject to verification and must be supported by documentation of repair, which must be submitted to the District within 10 days of a receipt of a request for such records.

**6-3-112 ~~Limited Exemption, Only Source of Space Heat:~~** ~~The requirement of Section 6-3-301 shall not apply to any person whose only source of heat for residential space heating is a wood-burning device. A person claiming this exemption cannot have use of another form of functioning space heating.~~

**Limited Exemption, Loss of Natural Gas and/or Electric Power:** The requirement of Section 6-3-301 shall not apply to a person whose dwelling is in an area that has a temporary loss of gas and/or electric utility service and there is no alternate form of heat available. Qualification for exemption is subject to verification.

**6-3-200 DEFINITIONS**

- 6-3-201** **Alternate Form of Heat:** A form of heat that does not burn wood or any other solid fuels. Alternate forms of heat include, but are not limited to gas-fueled (e.g. propane or natural gas) or electric heat.
- 6-3-2042** **APCO:** The Air Pollution Control Officer of the Bay Area Air Quality Management District (District) or the designee thereof.
- 6-3-2023** **Builder:** Any individual or company that constructs or sells any residential or commercial property. ~~unit with a wood-burning device installed therein.~~
- 6-3-203** **Curtailement Period:** ~~Any period so declared to the public by the APCO when a negative impact upon public health is anticipated, resulting from PM<sub>2.5</sub> levels forecast to exceed 35 micrograms/m<sup>3</sup>. Members of the public can verify status of a curtailment period through the following methods:~~
- ~~• Listen to local TV or Radio News;~~
  - ~~• Call 1-800-HELP-AIR; or~~
  - ~~• Check [www.sparetheair.org](http://www.sparetheair.org).~~
- ~~\_\_\_\_\_ The APCO may use any or all of the following methods to provide public information about a curtailment period:~~
- ~~• Media outlets of general circulation in the Bay Area including, but not limited to: newspapers, radio or television stations;~~
  - ~~• Recorded telephone messages on District informational phone numbers;~~
  - ~~• Emails to recipients of the District "Spare the Air" list server;~~
  - ~~• Messages posted on the District website, [www.sparetheair.org](http://www.sparetheair.org); or~~
  - ~~• Other means of communication as appropriate.~~
- 6-3-204** **Electric-powered Heating Device:** Any device that produces heat through use of an element utilizing resistance from alternating current or other means of electrical space heating, including, but not limited to, electric fireplaces, heat pumps, or wall heaters.
- 6-3-205** **EPA:** United States Environmental Protection Agency.
- 6-3-206** **EPA Certified:** Any wood-burning heater that meets the standards set forth in Title 40 Code of Federal Regulations (CFR), Part 60, Subpart AAA in effect at the time of installation and is certified and labeled pursuant to those regulations. An EPA certified wood heater may be freestanding, built-in, or an insert within a fireplace.
- 6-3-2057** **Fireplace:** Any installed masonry or factory-built wood-burning device designed to operate with an air-to-fuel ratio greater than or equal to 35-to-1., ~~a burn rate over 11 pounds per hour, or a weight over 1760 pounds.~~
- 6-3-2068** **Garbage:** Any solid, semisolid, or liquid waste generated from residential, commercial, and industrial sources, including trash, refuse, rubbish, industrial wastes, asphaltic products, manure, vegetable or animal solid or semisolid wastes, and other discarded solid or semisolid wastes.
- 6-3-2079** **Gas-fueled Heating Device:** Any device that utilizes natural gas or propane as a fuel source ~~exclusively supplied by a natural gas service utility~~, including, but not limited to, gas-fueled fireplaces, gas-fueled room heaters, or gas-fueled inserts, ~~or gas-fueled log sets.~~
- 6-3-210** **Insert:** A wood or gas-fueled heater designed to be installed in an existing masonry or factory-built fireplace.

- ~~6-3-208~~ ~~**Low Mass Fireplace:** Any fireplace and attached chimney, as identified in American Society for Testing and Materials (ASTM) E 2558-07, "Determining Particulate Matter Emissions from Fires in Low Mass Wood-burning Fireplaces", that can be weighed (including the weight of the test fuel) on a platform scale.~~
- ~~6-3-209~~ ~~**Masonry Heater:** Any site-built or site-assembled, solid-fueled heating device constructed mainly of masonry materials in which the heat from intermittent fires burned rapidly in its firebox is stored in its structural mass for slow release to the site. Such solid-fueled heating devices must meet the design and construction specifications set forth in ASTM E 1602-03, "Guide for Construction of Solid Fuel Burning Masonry Heaters."~~
- 6-3-211** **Mandatory Burn Ban:** Any period during which the air quality is forecast by the District to be unhealthy due to ambient levels of particulate and burning wood or any solid fuels is illegal in the Bay Area. A Mandatory Burn Ban is announced through a Winter Spare the Air Alert.
- 6-3-212** **Manufacturer:** Any person who constructs or imports a wood-burning fireplace or wood-burning heater.
- 6-3-213** **New Building Construction:** Any single or multi-family housing unit, for which construction began on or after November 1 2016. Construction is deemed to occur when the foundation for the structure is installed.
- 6-3-2104** **Pellet-fueled Device Wood Heater:** ~~Any solid-fueled~~ A wood-burning device which is operated on pellet-fuel and is either ~~U.S.~~ EPA ~~Phase II~~ certified or exempted under U.S. EPA requirements set forth in Title 40 Code of Federal Regulation (CFR), Part 60, Subpart AAA. Pellet fuel may be composed of compressed wood, corn or other biomass.
- 6-3-215** **Permanently Installed:** A device that is fixed to the structure of a dwelling or unit and is not readily movable.
- 6-3-216** **Particulate Matter (PM):** 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 combined water.
- 6-3-217** **PM<sub>2.5</sub>:** PM<sub>2.5</sub> has an aerodynamic diameter equal to or less than 2.5 microns.
- 6-3-2148** **Real Property:** The land and anything affixed to the land, such as a building or structures.
- 6-3-219** **Remodel:** A change to the appearance and/or functional utility of a fireplace or chimney that requires a building permit.
- 6-3-220** **Retailer:** Any person engaged in the sale of wood-burning fireplaces, wood-burning heaters, or outdoor wood-burning devices.
- ~~6-3-2121~~ **6-3-2121** **Ringelmann Chart:** A numerical ranking system whereby graduated shades of gray varying by five equal steps between white and black are visually compared to the density of smoke. The chart, as distributed by the United States Bureau of Mines, provides the graduated shades 1, 2, 3, 4 and 5, which are known as Ringelmann No. 1, 2, 3, 4 and 5, respectively. The system is used in determining whether emissions of smoke are within limits or standards of opacity.
- ~~6-3-21322~~ **6-3-21322** **Seasoned Wood:** Firewood that has a moisture content of 20 percent or less by weight using the testing method specified in Section 6-3-602.

- 6-3-21423 Solid Fuel:** Any wood, wood-based product, non-gaseous or non-liquid fuel, including but not limited to: manufactured logs, pressed logs, wood or other pellet products. ~~This definition does not include solid fuel intended for cooking food, such as charcoal.~~
- 6-3-21524 Treated Wood:** Wood of any species that has been chemically impregnated, painted, or similarly modified to improve resistance to insects or weathering.
- 6-3-225 Uncertified Wood Heater:** A wood heater that is not certified by the U.S. EPA to meet requirements in Title 40 Code of Federal Regulations, Part 60, Subpart AAA.
- ~~**6-3-226 U.S. EPA Phase II Certified Device:** Any device certified by the U.S. EPA to meet the performance and emission standards as set forth in Title 40 CFR, Part 60, Subpart AAA.~~
- 6-3-21726 Visible Emissions:** Emissions which are visually perceived by an observer. Restrictions on visible emissions in District regulations are expressed as numbers on the Ringelmann Chart, as published by the United States Bureau of Mines.
- 6-3-227 Winter Spare the Air Alert (WSTA):** An alert by the APCO that notifies the public when a negative impact upon public health is anticipated resulting from PM<sub>2.5</sub> levels forecast to exceed 35 µg/m<sup>3</sup> and that results in a Mandatory Burn Ban. Members of the public can verify status of a burn ban through the following methods:
- Listen to local TV or Radio News;
  - Call 1-877-4NO-BURN; or
  - Check [www.sparetheair.org](http://www.sparetheair.org).
- 6-3-228 Winter Spare the Air Season:** The months of November, December, January and February.
- 6-3-229 Wood Heater:** An enclosed wood-burning device capable of and intended for space heating such as a. wood stove, pellet-fueled wood heater, or wood-burning fireplace insert.
- 6-3-21830 Wood-burning Device:** Any wood ~~burning stove or~~ heater, ~~pellet-fueled device~~, fireplace, or any indoor permanently installed device used to burn any solid fuel for space-heating or aesthetic purposes. ~~This definition does not include wood-burning devices intended exclusively for cooking food, such as wood-fired ovens or barbecues.~~
- 6-3-300 STANDARDS**
- 6-3-301 Mandatory Burn Ban ~~Solid-fuel Burning Curtailment:~~** ~~Effective November 1, 2008,~~ During the months of November through February, no person shall operate or combust wood or solid-fuel products in any wood-burning device during a ~~curtailment period~~ Mandatory Burn Ban. ~~This curtailment requirement shall not apply to a gas-fueled heating device or an electric powered heating device.~~
- 6-3-302 Requirements for Wood Heater Manufacturers and Retailers:** No manufacturer or retailer shall advertise, sell, offer for sale or resale, supply, install or transfer a new or used wood-burning device intended for use within District boundaries unless the device meets or exceeds the requirements of Title 40 Code of Federal Regulations, Part 60, Subpart AAA, which are as follows:
- 302.1** Effective May 15, 2015, any wood heater that is manufactured must be certified to meet the 4.5 g/hr emissions rating specified in 40 C.F.R. § 60.532(a).
- 302.2** Effective December 31, 2015, any wood heater that is sold at retail must be certified to meet the emissions rating of 4.5 g/hr as specified in 40 C.F.R. § 60.532(a).
- 302.3** Effective May 15, 2020, any wood heater that is manufactured or sold at retail must



meet an emissions rating of 2.5 g/hr if crib tested, or 2.0 g/hr if cordwood tested, as specified in 40 C.F.R. § 60.532(b) and (c).

- 6-3-303** ~~**Criteria for Sale, Resale or Installation of Wood-burning Devices:** Effective January 1, 2009, no person shall sell, offer for sale or resale, supply, install, or transfer a new or used wood-burning device intended for use within District boundaries unless it is one of the following:~~  
~~303.1 A U.S. EPA Phase II certified wood-burning device;~~  
~~303.2 A pellet-fueled device;~~  
~~303.3 A low mass fireplace, masonry heater or other wood-burning device of a make and model that meets EPA emission targets and has been approved in writing by the APCO.~~
- ~~\_\_\_\_\_ This requirement does not apply if a wood-burning device is an installed fixture included in the sale or transfer of any real property. Any gas-fueled heating device or electric-powered heating device is allowed under this standard.~~
- 6-3-304** **Disclosure Requirements for Real Property:** Effective November 1, 2015, any person selling, renting or leasing real property shall provide sale or rental disclosure documents that describe the health hazards of PM<sub>2.5</sub> from burning wood or any solid fuel as a source of heat. Disclosure documents must disclose PM<sub>2.5</sub> health hazards in accordance with guidance made available on the District's website.
- 6-3-305** **Requirements for Rental Properties:** Effective November 1, 2018, all real property offered for lease or rent in areas with natural gas service shall have a permanently-installed form of heat that does not burn solid fuel.
- 6-3-3046** ~~**Criteria for Wood-burning Devices in Requirements for New Building Construction:** Effective November 1, 2016, for construction permits issued after January 1, 2009, no person or builder shall commence construction of a new building or structure permitted to contain or install a or containing a wood-burning device or install a new wood-burning device in a new building construction. resulting from a remodel unless the device meets the requirements of Section 6-3-303. Any gas-fueled heating device or electric-powered heating device is allowed under this standard.~~
- 6-3-307** **Requirements for Remodeling a Fireplace or Chimney:** Effective November 1, 2016, no person shall remodel a fireplace or chimney unless a gas-fueled, electric, or EPA certified device is installed that meets requirements in Title 40 Code of Federal Regulations, Part 60, Subpart AAA. This requirement is triggered by a fireplace or chimney remodel where a total cost exceeds \$15,000 and requires a local building permit. The total cost excludes the cost of a building permit.
- 6-3-3028** **Visible Emissions Limitation:** Effective November 1, 2015, no person shall cause or allow a visible emission from any wood-burning device in any building or structure that exceeds No. 1 on the Ringelmann Chart or 20 percent opacity for a period or periods aggregating more than 3 minutes in any hour ~~six consecutive minutes in any one-hour period~~. Visible emissions from the startup of a new fire for a period not to exceed twenty consecutive minutes in any consecutive four-hour period are not subject to this provision.
- 6-3-3059** **Prohibition Against Burning Garbage, Non-Seasoned Wood or Certain Materials:** No person shall cause or allow any of the following materials to be burned in a wood-burning

device: garbage, treated wood, non-seasoned wood, used or contaminated wood pallets, plastic products, rubber products, waste petroleum products, paints and paint solvents, coal, animal carcasses, glossy or colored paper, salt water driftwood, particle board, and any material not intended by a manufacturer for use as a fuel in a wood-burning device.

**6-3-30610 Requirements for Sale of Wood:** No person shall sell, offer for sale, or supply any wood (not to include manufactured logs) intended for use in a wood-burning device that does not meet one of the following requirements:

30610.1 Have a moisture content of 20 percent or less by weight, or

30610.2 For moisture content of greater than 20 percent by weight, be identified as unseasoned wood and include instructions on how to dry out the wood, as required in Section 6-3-4043.3, before combustion.

#### 6-3-400 ADMINISTRATIVE REQUIREMENTS

~~6-3-401 **Verification of Violation:** The APCO has sole authority over enforcing requirements of this rule and will independently verify any violation before issuing a Notice of Violation or taking other enforcement action.~~

**6-3-4021 Device Sale or Installation, Public Awareness Information:** ~~Effective January 1, 2009,~~ Any person ~~or builder~~ offering for sale, selling or installing a new or used wood-burning device subject to Sections 6-3-302 and 6-3-303 shall provide public awareness information to each purchaser of a wood-burning device in the form of pamphlets, brochures, or fact sheets addressing proper installation, operation, and maintenance of the wood-burning device and the health effects of wood smoke. The information on health effects of wood smoke shall include the following statement:

“Wood smoke contains harmful particulate matter (PM) which is associated with numerous negative health effects.”

**6-3-4032 Device Manufacturer’s Certification or Proof of Equivalency:** The manufacturer and ~~seller~~ ~~retailer~~ of any wood-burning device shall provide documentation to any purchaser that the device is U.S. EPA ~~Phase II~~ certified or that the device meets the equivalent ~~U.S. EPA Title 40 Code of Federal Regulations (CFR), Part 60, Subpart AAA. Phase II emission limits.~~

**6-3-4043 Labeling for Solid Fuel or Wood Sale:** Any person offering for sale, selling or providing solid fuel or wood intended for use in a wood-burning device within District boundaries shall:

4043.1 Attach a label to each package of solid fuel or wood sold that states the following:

“Use of this and other solid fuels may be restricted at times by law. Please check ~~1-877-4-NO-BURN~~ ~~[Toll-Free Number]~~ or ~~[Web Address]~~ <http://www.8774noburn.org/> before burning.”

~~The effective date of this subsection is one year following the date the APCO makes public the Toll-Free telephone number and Web Address specified in this subsection.~~

4043.2 ~~Effective January 1, 2009,~~ If wood is ~~seasoned~~ (not to include manufactured logs), then the label must also state the following:

“This wood meets air quality regulations for moisture content to be less than 20 % (percent) by weight for cleaner burning.”

4043.3 ~~Effective January 1, 2009,~~ If wood is not seasoned (not to include manufactured logs), then the label must state the following:

“This wood does **NOT** meet air quality regulations for moisture content and must be properly dried before burning.”

In addition to the disclosure listed above, any person offering for sale or selling wood that is not seasoned for use in a wood-burning device shall also provide written instructions on how to properly dry the wood to achieve a 20% (percent) by weight moisture content.

**6-3-404 Registration of EPA Certified Wood Heaters:** Effective November 1, 2016, any person seeking to claim the exemption provided in Section 6-3-110 must have previously registered their EPA certified wood heater in the District’s registration program and must maintain documentation that the device is operated according to manufacturer’s specifications. The following wood heaters are eligible to be registered:

**404.1** Wood heaters that are EPA Certified to meet performance and emission standard of 7.5 g/hr. or less.

**404.2** A pellet-fueled wood heater exempt from EPA certification requirements pursuant to the requirements in Title 40 Code of Federal Regulations (CFR), Part 60, Subpart AAA at time of purchase or installation.

**6-3-405 Registration Renewal:** Registration pursuant to Section 6-3-404 shall be for a term of 5 years. Application for renewal of registration must be received by the District prior to expiration of the 5-year term.

#### **6-3-500 MONITORING AND RECORDS**

**6-3-501 Burden of Proof:** The burden of proof of eligibility for exemption pursuant to Section 6-3-110, 111, and 112 is on the claimant. Any person claiming ~~such an~~ exemption shall maintain adequate documentation or records ~~explaining why demonstrating that the registered device is the only sole source of heat. and whether the situation is temporary or permanent.~~ Such records ~~will must~~ be ~~furnished~~ provided to the APCO upon request. Qualification for the exemption provided in Section 6-3-110 is subject to inspection and verification.

**6-3-502 Proof of Certification or Equivalency:** Upon request of the APCO, a manufacturer shall demonstrate that each wood-burning device subject to the requirements of Section 6-3-303~~2~~ meets the standards set forth in this regulation.

#### **6-3-600 MANUAL OF PROCEDURES**

**6-3-601 Determination of Visible Emissions:** Ringelmann standard shall be determined by Manual of Procedures-Volume 1 – Enforcement Procedures, Evaluation of Visible Emissions ~~or any other EPA method that has been approved by APCO.~~

**6-3-602 Determination of Moisture Content:** Moisture content of wood shall be determined by ASTM Test Method D 4442-92 or a hand-held moisture meter operated in accordance with ASTM Test Method D 4444-92, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters.

**6-3-603 Determination of EPA Certification or Equivalency:** EPA certification or demonstration of equivalence for wood burning-devices shall be performed in accordance with EPA Guidance Document for Residential Wood Combustion, Method 28, 5G, 5H, or other EPA approved methodology.

# Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices

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## Proposed Amendments

September 18, 2015

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BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT



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## I. EXECUTIVE SUMMARY

The Bay Area Air Quality Management District (“Air District”) is proposing amendments to Regulation 6, Rule 3: Wood Burning Devices (“Rule 6-3”). The purpose of the amendments to Rule 6-3 is to further reduce emissions of fine particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub> or “fine particulate”) and visible emissions from wood-burning devices used as a source of primary or supplemental heat, or for ambiance.

In the wintertime, wood burning is a major contributing source of PM<sub>2.5</sub> concentration in the Bay Area and wood smoke contributes approximately 30 to 40 percent of PM<sub>2.5</sub> concentrations. Because of the topography and wintertime weather patterns in the Bay Area, and the large number of households burning wood in the region, PM<sub>2.5</sub> concentration can build and result in unhealthy air quality.

Since the adoption of Rule 6-3 in 2008, the Air District has implemented multiple strategies to reduce PM<sub>2.5</sub> emissions from residential wood burning in the Bay Area through a robust enforcement program. In addition, a comprehensive public education and outreach effort outlining the harmful effects of wood smoke has resulted in reduction of wood burning by Bay Area residents. Although Rule 6-3 has successfully reduced wintertime PM<sub>2.5</sub> emissions by about 2,660 tons per year (tpy), wood smoke continues to cause unhealthy air, to exceed the PM<sub>2.5</sub> federal health standard, and negatively impact local air quality.

The United States Environmental Protection Agency (EPA) under the authority of the Clean Air Act (42 U.S.C. 7401 et seq.), established the National Ambient Air Quality Standards (NAAQS) to protect human health with a margin of safety from adverse health impacts due to exposure to air pollution. The proposed amendments to Rule 6-3 would help the Bay Area achieve the state and federal ambient air quality standards for PM<sub>2.5</sub>. It is estimated that the Air District’s proposed amendments would reduce PM<sub>2.5</sub> emissions by 321 tpy and further improve local and regional air quality in the Bay Area.

The proposed rule amendments would:

- clarify and strengthen the requirements for claiming exemptions;
- adopt new wood heater standards set forth by EPA;
- strengthen the visible emissions limitation;
- require real estate and rental disclosures to communicate the health hazards of PM<sub>2.5</sub>; and
- transition new building construction and rental properties to cleaner heating options.

In preparing these proposed amendments, Air District staff reviewed similar regulations in other air districts and consulted with interested stakeholders such as the Hearth, Patio and Barbecue Association; Bay Area Realtor Associations; California Apartment Association; American Lung Association; Families for Clean Air; and any interested

members of the general public. Nine public workshops were conducted in March and April 2015 to discuss the proposed amendments to the rule and comments from those meetings have been incorporated into this draft proposal.

Potential environmental impacts from the proposed rule amendments were reviewed by the Air District's environmental consultant, Environmental Audit, Inc. An evaluation of the proposed amendments conclude that there would be no significant adverse environmental impact, and as a result, staff proposes the adoption of a California Environmental Quality Act (CEQA) Negative Declaration.

A socioeconomic analysis on the proposed rule amendments was conducted by Bay Area Economics. The findings of that analysis indicate there are no significant economic impacts resulting from changes on the household, landlord or renters to transition to cleaner heating options; however with strengthened rule requirements that further reduce wood-burning by 20% in the Bay Area, there may be a significant economic burden to small businesses selling wood.



## II. BACKGROUND

Rule 6-3 is different from other Air District rules that regulate sources of air pollution in that the success of Rule 6-3 depends heavily on the cooperation and participation of residents living in the nine Bay Area counties, rather than on industrial sources. This rule is especially challenging because burning wood is a wintertime tradition and can evoke a certain amount of nostalgia for some people; however, the fine particulates that are generated by the burning of wood can impact health both regionally and locally.

### A. Health Hazards of PM<sub>2.5</sub>

The nine counties that surround San Francisco Bay are home to almost seven million residents and an estimated 1.4 million fireplaces and wood stoves. These fireplaces and wood stoves generate fine particulates, are the leading source of air pollution in the wintertime, and can cause serious health consequences for Bay Area residents.

The act of burning wood dates to the beginning of human history and was thought to have a benign impact on human health. However, it is now understood that smoke from residential wood-burning devices contains harmful particle pollution, also known as “fine particulate matter” or PM<sub>2.5</sub>, along with other pollutants, including carbon monoxide, volatile organic compounds (VOCs), black carbon, and air toxics such as benzene. Burning wood can increase PM<sub>2.5</sub> pollution to levels that pose serious health concerns, and in most areas, residential wood smoke constitutes the majority of the particle pollution problem during winter months.

Fine particles contain microscopic solids or liquid droplets that are so small that they can penetrate deep into the lungs and cause serious health problems. People with respiratory illnesses, children, and the elderly are more sensitive to the effects of PM<sub>2.5</sub>, but it can affect everyone. Numerous scientific studies have linked PM<sub>2.5</sub> exposure to a variety of health issues, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing. However, healthy people also can experience temporary symptoms from exposure to elevated levels of particulates in addition to these more serious health issues.<sup>1</sup>

### B. Wintertime Atmospheric Conditions and PM Levels

The Bay Area’s PM<sub>2.5</sub> formation is influenced by the local atmospheric conditions, geographical distribution of wood-burning sources, and air exchange with neighboring air basins. The highest PM<sub>2.5</sub> levels occur from November through February, when less frequent vertical atmospheric mixing occurs in combination with decreased surface wind speeds. Horizontal mixing and surface winds are key to dispersing particulates in the atmosphere and keeping ambient concentrations below the PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS). Winter meteorological conditions along with topographic features that further limit mixing cause PM<sub>2.5</sub> levels to build up to unhealthy levels in the Bay Area.

Air District analyses show that wind patterns can transport particulates from one location to another within the Bay Area air basin, and from other air basins into the Bay Area, resulting in increased PM<sub>2.5</sub> levels.<sup>2</sup> For example, a ridge of high pressure that settles over northern California for multiple days will cause overnight temperature inversions to form, trapping particulates near the surface. Over a period of several days, these pollutants will accumulate, resulting in elevated PM<sub>2.5</sub> levels. As high pressure continues to build, light winds can move the particulates from one area to another, increasing these impacts.

**C. Source Description – Wood-Burning Devices**

Emissions from wood-burning devices can vary and depend on a variety of factors, including the design and age of the wood-burning device, the type and amount of fuel used, and the ability of the user to operate the device in accordance with manufacturer’s specifications and guidelines. Rule 6-3 defines wood-burning devices as any fireplace; wood heater, such as a wood or pellet stove; fireplace insert; or any permanently installed indoor device that burns solid fuel for space-heating or aesthetic purposes. In the process of burning wood or a solid-fuel product such as manufactured logs, pressed logs, or wood pellets, these devices must vent gases and combustion by-products through a flue or chimney. Devices that are sold in the Bay Area are required to be EPA certified to meet lower emission rates as certified by an accredited laboratory. There are a variety of wood-burning devices that either exist in homes or are available for purchase by the consumer. Table 1 breaks down wood-burning devices and their functions.

Table 1. Types of Wood-burning Devices and Their Function

<b>Burning Wood for Heat (Wood Heaters)</b>	
Wood Stove	<p>A wood stove is an appliance that is usually made of cast iron, steel, or stone. Wood stoves that burn wood for fuel can be used as a primary or secondary source of heat. There are generally two types of wood stoves: catalytic and non-catalytic stoves.</p> <p>In catalytic stoves, the smoky exhaust is passed through a coated ceramic honeycomb inside the stove where the smoke gases and particles ignite and burn. These types of stoves require maintenance and eventually the catalyst must be replaced during the lifetime of the stove, in order to meet stated emission limits.</p> <p>Non-catalytic stoves do not use a catalyst. Newer EPA certified stoves have three internal characteristics that create a good environment for more complete combustion and, therefore, reduced emissions. The three characteristics include firebox insulation; a large baffle to produce a longer, hotter gas flow path; and pre-heated combustion air introduced through small holes above the fuel in the firebox. These stoves still require</p>

	maintenance to operate effectively, but do not have a catalyst to replace.
Pellet Stove	Pellet stoves are similar in appearance to wood stoves; however, instead of wood, pellet stoves burn a renewable fuel made of ground, dried wood and other biomass wastes compressed into pellets that must meet specific characteristics, such as moisture content. Pellet stoves operate by pellets being poured into a hopper, which feeds automatically into the stove. Pellet stoves utilize active air and fuel management systems to control combustion efficiency. Unlike wood stoves and fireplaces, most pellet stoves need electricity to operate.
Fireplace Inserts	Fireplace inserts are similar in function and performance to free-standing wood or pellet stoves, but are designed to be installed within the firebox of an existing masonry or metal fireplace. These inserts may burn wood or pellets.
<b>Burning Wood for Ambiance</b>	
Fireplace	There are two major types of wood-burning fireplaces: traditional masonry fireplaces that are typically built of brick or stone and are constructed on site by a mason; and “low-mass” fireplaces that are engineered and pre-fabricated in a manufacturing facility prior to installation. In the Bay Area most fireplaces, whether masonry or low-mass, are not used as a primary source of heat; their primary function is for ambiance and heating is a secondary function.

## **D. EPA Certified Wood Heater Requirements**

### 1. Emission Requirements

Residential wood-burning devices contribute significantly to national particulate air pollution and the EPA has regulated wood heater particulate emissions since 1988. The EPA developed certification, associated testing and other requirements in order for wood heaters to obtain certification in Title 40, Code of Federal Regulations, Part 60, Subpart AAA (Standards of Performance for New Residential Wood Heaters). Wood heaters meeting certification requirements with an emissions rating of 4.1 grams per hour (g/hr) for units equipped with a catalytic combustor and 7.5 g/hr for units without a catalytic combustor were designated as “EPA Phase II Certified.” Rule 6-3 currently allows only wood heaters that are EPA Phase II Certified to be sold in the Bay Area.

On February 3, 2015, the EPA updated the emission standards for residential wood heaters establishing federal air standards for several types of previously unregulated new wood heaters. The updated requirements lower allowable emission rates for certified wood heaters and set emission rates for a broader range of previously unregulated wood- or pellet-burning heaters, stoves, and other residential heaters. These requirements also included setting performance standards for outdoor and indoor wood-fired boilers (also known as hydronic heaters), indoor wood-fired forced air furnaces, and single burn-rate woodstoves. Only wood- and pellet-burning stoves

or inserts are covered in this Air District staff report, because other heaters are not widely used in California and the greater Bay Area.

The EPA's updated requirements in Title 40, Code of Federal Regulations, Part 60, Subpart AAA, phase in the new emission requirements over a five-year period beginning in 2015. The requirements apply only to new wood heaters (manufactured and sold), and will not affect wood heaters already in use (see Section V, "Proposed Rule Amendments," in this staff report for the new emission requirements for the manufacturing and sale of residential heaters). A summary and report of the new emission standards can be found on EPA's website:

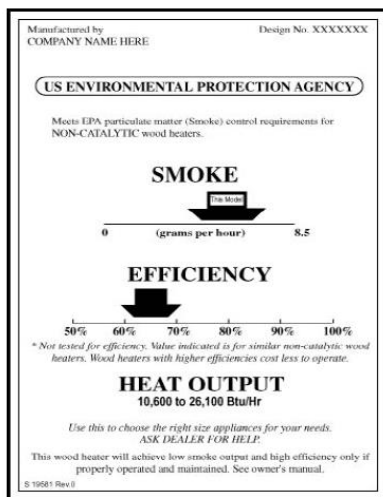
<http://www2.epa.gov/residential-wood-heaters/final-new-source-performance-standards-residential-wood-heaters>.

## 2. Labeling Requirements

The EPA's certification process requires manufacturers to verify that each of their wood heater model lines meets a specific particulate emission rate by undergoing emission testing at an EPA accredited laboratory.

An EPA-certified wood stove can be identified by a temporary paper label attached to the front of the wood stove and a permanent metal label affixed to the back or side of the wood stove. Certification labels verify and document that a wood heater has met standardized testing by an independent body and is designed so that the fine particulate emissions are less than the emission limits for the specific device type. Figure 1 is an example of an EPA certification label on a wood-burning stove.

Figure 1. Example of EPA Certification Label



*Temporary Wood Stove Label*



*Permanent Wood Stove Label*

### **III. PM<sub>2.5</sub> EMISSIONS FROM WOOD SMOKE**

Since Rule 6-3 was adopted, it is estimated that PM<sub>2.5</sub> emissions from residential wood-burning have been reduced by up to 59%. While the rule has been successful at reducing regional fine particulate matter levels, wood smoke continues to cause unhealthy air and PM<sub>2.5</sub> exceedances of the federal health standard. Additional health protective measures and PM<sub>2.5</sub> emission reductions are necessary to address both regional and local wood smoke concerns.

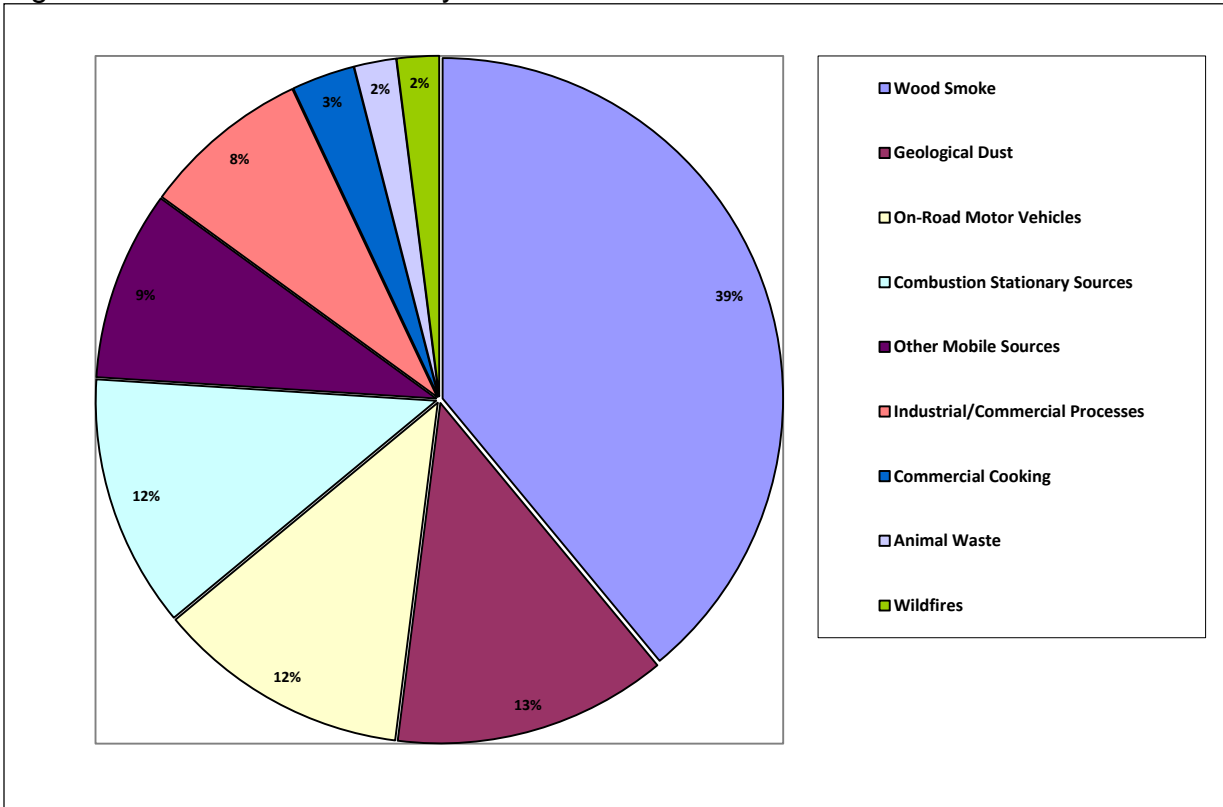
The Air District compiles regional and county level emissions inventories that detail emission estimates for air pollution sources associated with burning wood. Past, present, and future-year emissions inventories identify and quantify air pollution from wood-burning devices, which helps the Air District develop plans and rules to achieve and maintain air quality standards.

Each year, the Air District estimates the amount of fine particulate emissions from burning wood by combining multiple years of data from telephone surveys of Bay Area residents and demographic information from the U.S. Census Bureau. This allows the Air District to estimate the number of wood-burning devices and the amount of wood burned per year. An emission factor based on EPA's Compilation of Air Pollutant Emission Factors (AP-42) is then used to estimate the amount of particulates generated by wood burning from each county in the Bay Area.

#### **A. Winter Sources of PM<sub>2.5</sub> Emissions**

Wood-burning devices contribute substantial amounts of fine particulate matter into the atmosphere in the Bay Area especially during the winter months when wood burning is at its highest. Analysis of ambient particulate monitoring utilizing chemical mass balance modeling techniques, Carbon-14 dating of collected particulate matter, combined with Bay Area winter 2013 emission data, indicates wood smoke is the single greatest contributor (~30–40%) to PM<sub>2.5</sub> in the Bay Area. A breakdown of sources contributing to PM<sub>2.5</sub> concentrations is shown in Figure 2.

Figure 2. Winter Sources of Bay Area Fine Particle Pollution



### B. Emissions from Wood Burning Devices by County

Prior to the adoption of Rule 6-3, the Air District’s emission inventory in 2005 showed wood-burning devices contributed 17.61 tons per day (tpd) or 6,427 tons per year (tpy) of PM<sub>2.5</sub>. Based on 2014 emissions data shown below, it is notable that there was a sizable reduction in PM<sub>2.5</sub> emissions associated with wood smoke in the Bay Area regionally. This data shows the Air District achieved a 59% (2,660 tpy) reduction in PM<sub>2.5</sub> emissions from wood-burning devices.

Although the Bay Area region has benefited from reduced PM<sub>2.5</sub> emissions, wood smoke affects various parts of the Bay Area differently. Studies conducted by the Air District in Santa Rosa and the San Geronimo Valley concluded that wood smoke has significant localized impacts that result in exceedances of the PM<sub>2.5</sub> federal health standard.<sup>3</sup> In some cases wood smoke can contribute up to 70% of the PM concentration in a given area.<sup>4</sup> Therefore, even though emissions are going down regionally, certain neighborhoods, communities, cities, and counties can experience greater PM<sub>2.5</sub> concentrations than others.

Table 2 compares the 2005 and 2014 PM<sub>2.5</sub> emissions inventory for each of the nine counties in the Bay Area air basin.

Table 2. PM<sub>2.5</sub> Emissions by County 2005 and 2014

County	2005	2014
Alameda	2.22	1.37
Contra Costa	4.88	2.96
Marin	1.35	0.69
Napa	0.71	0.40
San Francisco	0.30	0.18
San Mateo	1.03	0.58
Santa Clara	3.61	2.18
Solano (Part within Air District)	0.90	0.50
Sonoma (Part within Air District)	2.59	1.46
<b>Total Emissions Bay Area</b>	<b>17.61 tpd (6427 tpy)</b>	<b>10.32 tpd (3767 tpy)</b>

\*Includes EPA-certified and non-EPA-certified devices

### C. Regional PM<sub>2.5</sub> Exceedances

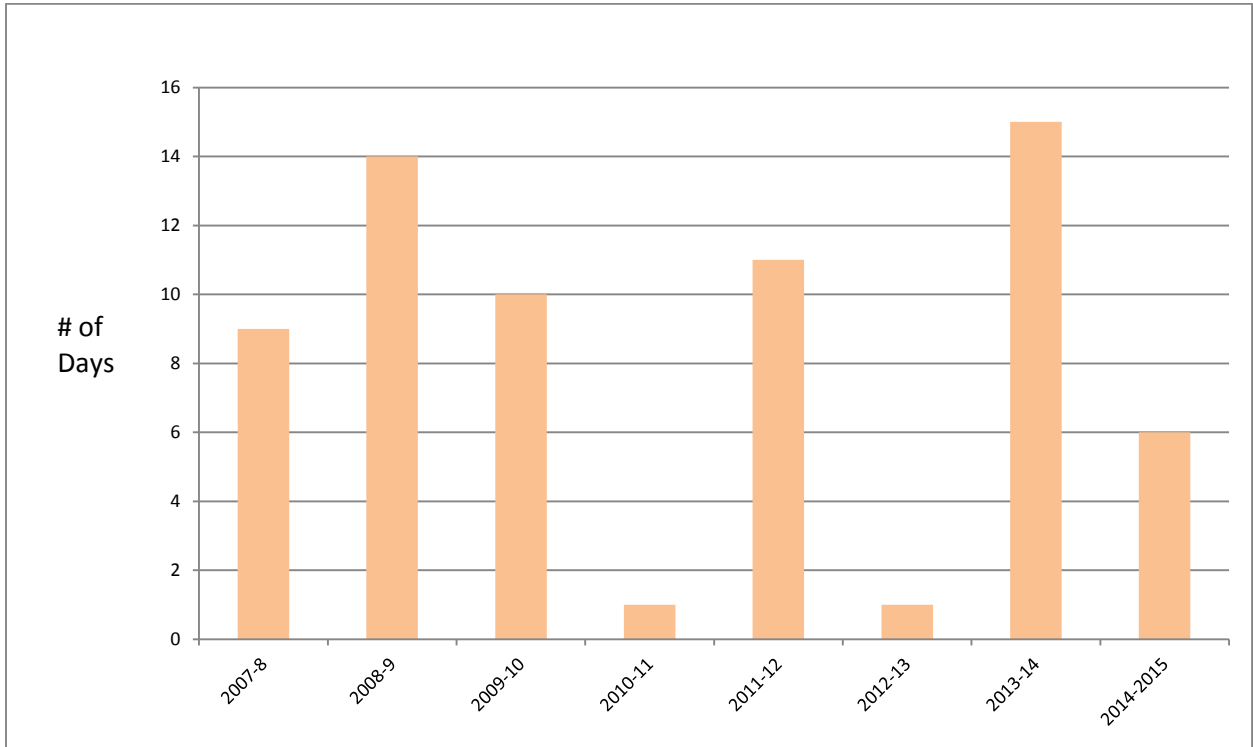
To protect public health and welfare, the EPA adopted National Ambient Air Quality Standards for PM<sub>2.5</sub>. Rule 6-3 is a measure designed to help the Bay Area meet the NAAQS for PM<sub>2.5</sub> by forecasting an exceedance of the 24-hour PM<sub>2.5</sub> federal health standard of 35 µg/m<sup>3</sup>, triggering a *Winter Spare the Air Alert* and making it illegal to combust wood or any solid fuel in a wood-burning device.

PM<sub>2.5</sub> concentrations are monitored in the Bay Area by the Air District's comprehensive air monitoring network. The PM<sub>2.5</sub> measurements are used to determine compliance with the federal health standard, identify air quality trends and help Air District meteorologists forecast regional and local air quality.

During the past 8 winters, the Bay Area exceeded the 24-hour PM<sub>2.5</sub> NAAQS an average of 8 days, in comparison to an average of 17 days prior to Rule 6-3 adoption. Table 3 shows the number of exceedances each year since the adoption of Rule 6-3.



Table 3. Number of Federal PM<sub>2.5</sub> NAAQS Exceedance 2007 to 2014



Although the region is a non-attainment area for the 24-hour PM<sub>2.5</sub> standard, air quality in the Bay Area has improved over time and is moving closer to meeting the EPA’s 24-hour standard.<sup>5</sup> The Bay Area exceeds the 24-hour PM<sub>2.5</sub> standard less frequently than in the past, and when exceedances of the standard do occur, they are generally less severe. The combination of fewer days exceeding the standard and lower peak values on those days means that exposure of Bay Area residents to unhealthy levels of PM is reduced.<sup>6</sup> While the region’s wood smoke emissions are improving, reductions are still necessary to achieve clean air at both the local and regional levels and prevent future PM<sub>2.5</sub> exceedances of the 24-hour standard from occurring. The Bay Area meets both the State of California and the national annual PM<sub>2.5</sub> standards.

#### IV. PUBLIC EDUCATION, OUTREACH, AND INCENTIVES

The Air District takes a multifaceted approach to reducing emissions from residential wood-burning. Equally important to regulatory controls are the public outreach and education efforts that help everyone have a better understanding of the hazards of PM<sub>2.5</sub> that result in behavioral changes to reduce wood burning. In addition, incentive programs that provide help and financial assistance to transition older, more polluting heaters to cleaner technologies have also been put in place.

##### A. Winter Spare the Air Program

The Air District’s Winter Spare the Air (WSTA) Program notifies residents when particulate matter levels are forecast to be unhealthy and prohibits wood-burning



throughout the Bay Area. The program communicates through a range of Bay Area networks and media outlets throughout the winter season. When a *Winter Spare the Air Alert* is declared, burning wood, firelogs, pellets, or any other solid fuels in fireplaces, woodstoves, or other wood-burning devices is illegal. Residents and businesses can call 1-877-4NO-BURN (1-877-466-2876) to check the *Winter Spare the Air Alert* status. Residents can sign up to receive automatic phone *Winter Spare the Air* alerts by calling 1-800-430-1515.

## **B. Incentive Program**

In addition to amending Rule 6-3, the Air District is developing a financial incentives program to help replace uncertified wood-burning devices with cleaner, more efficient heating devices to further decrease fine particulate emissions due to wood burning. By providing financial assistance to households, this program is designed to encourage eligible Bay Area residents to upgrade their more polluting wood-burning devices, such as fireplaces and uncertified wood stoves, to cleaner heating devices. This program will have the flexibility to focus on neighborhoods that experience unhealthy air quality as a result of wood smoke, as well as provide assistance to low-income households. The Air District plans to implement this incentive program in tandem with proposed Rule 6-3 rule amendments.

## **V. PROPOSED RULE AMENDMENTS**

Since the adoption of Rule 6-3 in 2008, the Air District has recognized there are parts of the Rule that can benefit from changes or additional clarification to ensure interpretation and enforcement are consistent with the intent of the rule to further reduce PM<sub>2.5</sub> emissions regionally and locally. In March and April 2015, the Air District hosted nine public workshops to discuss proposed amendments to the rule.

This section summarizes the Air District's revised proposal following nine workshops at which the public provided input and ideas on the rule. The proposed amendments incorporate changes from public comments received during workshop as well as comments from interested parties and stakeholders. The Air District is proposing the following amendments to Regulation 6, Rule 3.

### **A. Sole Source of Heat Exemption**

In Rule 6-3, a wood-burning device may be used during a *Winter Spare the Air Alert* if that wood-burning device is the only source of permanently installed heat. Following rule adoption in 2008, and through its policy, the Air District clarified that a dwelling with a permanently installed propane heater does not qualify for this exemption.

The Air District proposes to amend the Sole Source of Heat exemption to strengthen and clarify the conditions for qualification. The proposed amendment would require that residences using a non-certified wood-burning device or fireplace as their only source of heat replace or upgrade it to an EPA certified device to qualify for this exemption. Additionally, a claimant would be required to register that EPA-certified device with the

Air District to receive this exemption. The Air District's new proposed registration program requirement is discussed later in this section.

This proposal ensures that devices used as sole sources of heat are cleaner and more efficient than those previously exempt from the rule. Wood stoves tend to last a long time and are replaced less frequently than other major appliances; so many older, uncertified wood-burning devices are still used regularly for heating. For this reason, the replacement of older, more polluting, uncertified wood burning devices that are used as primary heating in areas without natural gas is vital to improving air quality.

### **B. Exemption for Non-functional, Permanently Installed Heaters**

Rule 6-3 currently does not provide an exemption for non-functional heaters and does not address concerns where a wood-burning device may be the only source of heat available until the primary heater is repaired. The Air District proposes a temporary 30-day exemption to allow use of a wood-burning device during a *Winter Spare the Air Alert* while a repair is being made to resume function of a non-wood heater. This exemption will only apply if a household has no alternate form of heat available, such as gas or electric heating. The proposal would require claimants to submit repair documentation for verification upon request by the Air District within ten days.

### **C. Exemption for Loss of Natural Gas and/or Electric Power**

The current Rule 6-3 has two separate exemptions for temporary gas or electric service outages. These exemptions allow use of a wood-burning device during a *Winter Spare the Air Alert* if there is a loss of natural gas and/or electric power due to natural disasters, such as, but not limited to, earthquakes, fires, floods, storms, or if an outage is due to utility service disruptions. The Air District is proposing to combine these two exemptions sections into one and require that service outages must be verifiable by the local utility service provider.

### **D. Clarify, Amend, or Add Definitions to Rule**

The proposed changes to definitions in Section 200 of the rule would include a number of new or amended definitions to support amended rule requirements. Please see the proposed draft Rule 6-3 for the full list of proposed definitions.

### **E. U.S. EPA Requirement for Residential Wood Heaters**

Since adoption of Rule 6-3 in 2008, the Air District has enforced EPA requirements for residential wood heaters such that all wood heaters sold in the Air District must be "EPA Phase II Certified" in accordance with Title 40, Code of Federal Regulations, Part 60, Subpart AAA.

On February 3, 2015, EPA updated emission standards for new residential wood heaters and the Air District is proposing to require wood burning devices to meet these new certification requirements. EPA's new emission standards and five-year

compliance schedule for new heaters establishes health-protective measures that ensure manufacturers continue to move toward cleaner technologies and consumers transition to cleaner heater options. The Air District fully supports this transition and encourages all consumers with older wood stoves that were purchased before 1988, and are not EPA certified, to take advantage of these new cleaner, EPA-certified heating options.

Newly manufactured wood heaters have to comply with the emissions standards and specified test methods in Title 40, Code of Federal Regulations, Part 60, Subpart AAA, as summarized in Table 3.

Table 3. Title 40, CFR Part 60, Subpart AAA: Requirements for Wood Heater Manufacturers and Retailers

Requirement	Emissions Rating	Compliance Date
40 C.F.R. 60.532(a)	4.5 g/hr	May 15, 2015
40 C.F.R. 60.532(b) and (c)	2.5 g/hr (crib tested) 2.0 g/hr (cordwood tested)	May 15, 2020
40 C.F.R. 60.532(a)	Effective December 1, 2015, devices that have an emission rating of greater than 4.5 g/hr can no longer be sold, purchased, or installed.	

Wood heaters currently in use and in homes are not affected by these new emission standards and the standards do not require a replacement or upgrade of existing devices. They also do not apply to outdoor fireplaces, pizza ovens, fire pits, barbecues, or chimineas.

For a list of all EPA-certified wood heaters, please refer to:  
<http://www2.epa.gov/sites/production/files/2013-08/documents/certifiedwood.pdf>

#### **F. Requirement for Sale, Resale, Transfer or Installation of Wood-Burning Devices**

The current rule prevents the sale, resale, supply, transfer, or installation of non-EPA certified wood-burning devices within the Bay Area. The purpose of this requirement is to ensure that no member of the general public sells or purchases wood-burning devices that are not EPA certified. This provision is intended to remove loopholes that allow non-compliant stoves to stay on the market and be sold by the general public. This requirement applies to both used and new devices; however, the requirement does not apply to a wood-burning device that is an existing installed fixture included in the sale or transfer of real property.

#### **G. Visible Emissions Limitation**

The visible emissions limitation in the current Rule 6-3 uses the Ringelmann Smoke Chart to measure the apparent density of smoke. The Ringelmann No. 1 limit used in Rule 6-3 is a visible emission standard equivalent to 20% opacity. Visible emissions

may not exceed 20% opacity from chimneys, stovepipes, or flues based on visual observation for at least six consecutive minutes in any one-hour period. This requirement does not apply to the startup of a new fire for 20 minutes in any four-hour period.

The Air District proposes to amend and strengthen the standard to be consistent with Regulation 6, Rule 1, General Requirements, for sources of particulate matter. The proposed amendment would not change the 20% opacity limit; however, it would shorten the duration of excessive visible emissions to three minutes in any hour. Following a 20-minute start-up allowance for new fires, visible emissions of greater than 20% opacity and aggregate to three minutes in any hour would be prohibited. This requirement does not apply to the startup of a new fire for 20 minutes in any four-hour period. The proposed amendment would make it easier for Air District staff to determine which wood-burning devices are not operating properly and creating excessive smoke.

## **H. Real Estate and Rental Disclosure Requirement**

The purpose of Rule 6-3 is to limit emissions of particulate matter and visible emissions from wood-burning devices to protect air quality and public health. It is vital that the public understands the health hazards of PM<sub>2.5</sub> and why choosing clean heating alternatives that do not burn wood is important.

The Air District is proposing a proactive and informative measure that would require disclosure when selling, leasing, or renting properties with wood-burning equipment. The disclosure must describe the negative health impacts of PM<sub>2.5</sub>. The requirement for disclosure of the negative health impacts of PM<sub>2.5</sub> exposure is consistent with the Air District's mission to educate the public, discourage wood-burning, and encourage the transition to cleaner heating alternatives. Guidance from the Air District to develop language in the disclosure documents would be provided to real estate and rental associations.

## **I. Requirement for Rental Properties**

The Air District is proposing a new requirement that all rental properties in areas with natural gas availability include a permanently installed form of heat that does not burn wood or solid fuel. This supports existing requirements in the California Health and Safety Code, Division 13, Part 1.5, *Regulation of Buildings Used for Human Habitation*, which requires landlords to provide adequate heat to tenants. This proposed requirement further ensures all landlords provide tenants with a cleaner heating option than burning wood in areas that have natural gas by disallowing all rental properties in areas with natural gas service from claiming the Sole Source of Heat exemption.

## **J. Requirement for New Building Construction**

Rule 6-3 currently allows any new construction of a building or structure to install a wood-burning device that meets EPA certification requirements.

The Air District proposes to amend and strengthen this requirement by ensuring new construction in the Bay Area transition to only the cleanest, most efficient heating options, such as, but not limited to, gas-fueled or electric heaters. Under this proposed amendment, new buildings could no longer install a wood-burning fireplace or EPA-certified wood heater.

### **K. Requirement for Fireplace or Chimney Remodels**

Rule 6-3 currently requires the installation of a gas-fueled, electric, or EPA-certified wood-burning device as part of a remodel of a fireplace or chimney, when that remodel construction requires a local building permit. The current requirement of the rule is vague and may unreasonably require any fireplace or chimney remodel, regardless of the scale or scope of the remodel job, to install an EPA-certified device.

The Air District proposes to amend and clarify this requirement so that only remodels with costs greater than \$15,000 (excluding cost of local building permit) and that require a building permit would trigger the installation of an EPA-certified, gas-fueled, or electric device. Enforcement of this provision would be by the local city or county where the building permit is received.

### **L. Registration Requirement**

The Air District proposes to establish a new registration program that would require all claimants of Sole Source of Heat exemption to register their EPA certified wood-burning devices. The Air District is proposing a free registration program with a requirement to renew the registration every five years. Registrants would be required to maintain all documents that verify Sole Source of Heat exemption status and would be required to be able to demonstrate that registered devices are operated according to manufacture specifications.

This proposed registration requirement would provide an inventory of EPA-certified wood-burning devices in geographical areas without natural gas service and allow the Air District to strategically allocate resources to households that are not using EPA-certified devices in areas without natural gas service. This proposed requirement also would allow Air District staff to better address wood smoke concerns in certain communities that do have natural gas service and are using wood-burning devices during WSTA alerts.

### **M. Mandatory Burn Ban**

Rule 6-3 prohibits wood-burning in the Bay Area when forecasts indicate PM<sub>2.5</sub> concentrations will reach unhealthy levels, exceeding the 24-hour PM<sub>2.5</sub> federal health standard of 35 µg/m<sup>3</sup> resulting in a WSTA. This requirement is currently named in the rule as “Solid-fuel Burning Curtailment.”

The Air District does not plan to amend the standard of this requirement; however, the Air District is proposing to amend the name by changing it from “Solid-fuel Burning

Curtailement” to “Mandatory Burn Ban.” A name change would effectively communicate to the general public that when a WSTA alert is declared, a “Mandatory Burn Ban” is in effect and wood burning is illegal in the Bay Area.

## VI. EMISSION REDUCTIONS

In 2008, the Air District estimated PM<sub>2.5</sub> emissions would be reduced by 983 tpy due to the implementation of Rule 6-3, based on data from the 2005 emissions inventory. A comparison of emissions in 2005 with the Bay Area’s 2014 emissions inventory highlights the rule’s effectiveness in reducing PM<sub>2.5</sub> emissions on a regional level. Since the adoption of Rule 6-3 in 2008, the Air District estimates emissions have been reduced by 59% (2,660 tons per year).

The Air District estimates an additional PM<sub>2.5</sub> emissions reduction of 321 tpy from the 2015 proposed amendments. Table 4 summarizes the estimated reductions expected from each proposed amendment.

Table 4. Projected Emissions Reduction from Rule 6-3 Amendments

2015 Proposed Amendments	Estimated PM <sub>2.5</sub> Reductions
Sole Source of Heat Exemption (EPA certified only)	260 tpy
Requirement for Rental Properties	17 tpy
Requirement for New Building Construction	44 tpy
<b>Total Emissions Reduced</b>	<b>321 tpy</b>

The section below discusses the emission reductions from each of the Air District’s 2015 proposed requirements.

### A. Sole Source of Heat Exemption

This proposed exemption requires replacement of an uncertified wood-burning device with an EPA-certified wood-burning device in order to claim Sole Source of Heat exemption. An additional component to this requirement is that the EPA-certified wood heater must be registered with the Air District’s Registration program. Table 6 describes typical heating requirements for an average household and compares the estimated cost and associated emissions from an uncertified device with an EPA-certified device.



Table 6. Cost Comparison of EPA-Certified Heater vs. Non-Certified Device

	<b>NON-CERTIFIED WOOD-BURNING DEVICES</b>  (DOES NOT QUALIFY FOR PROPOSED EXEMPTION)		<b>EPA-CERTIFIED WOOD HEATERS</b>  (QUALIFIES FOR PROPOSED EXEMPTION)	
<b>Type of Heater</b>	Fireplace	Uncertified Wood Stoves/Inserts	EPA-Certified Wood Stove/Insert	Pellet Stove/Insert
<b>Fuel Cost</b>	\$400/cord	\$400/cord	\$400/cord	\$250/ton
<b>Heat Efficiency</b>	10%	50%	70%	78%
<b>Cost of Heating (per MM BTU)</b>	Hard Woods: \$162.62	Hard Woods: \$32.52	Hard Woods: \$23.24	\$19.43
	Soft Woods: \$253.16	Soft Woods \$50.64	Soft Woods: \$36.16	
<b>PM<sub>2.5</sub> Emissions</b>	300 lbs	*60 lbs	7 lbs	5 lbs

\*Requires only 0.2 cords of wood needed for equivalent heat output

The proposed amendment is expected to reduce emissions specifically in geographical areas where there is no natural gas service. Based on census data from 2009 to 2013, the Air District estimates that approximately 19,000 households used wood as a primary source of heat. Of those households, it is estimated that 50% of homes in areas without natural gas use an EPA-certified wood-burning device for heating and the other 50% use an uncertified wood-burning device, such as a wood stove or fireplace. The Air District estimates PM<sub>2.5</sub> emissions would be reduced by 260 tons per year resulting from this proposed exemption amendment. Table 7 shows the estimated PM<sub>2.5</sub> emission reductions associated with the replacement of uncertified wood-burning devices with EPA-certified wood heaters.

Table 7. Emissions Reduction from Proposed Exemption Amendment

# of Households	Annual PM <sub>2.5</sub> Emissions for the Device	Total Annual PM <sub>2.5</sub> Emissions
50% of households w/EPA-certified wood heaters	7 lbs	30 tpy
50% of households with uncertified wood-burning devices	60 lbs	290 tpy
<b>Estimated Total Emissions Reduced</b>		<b>260 tpy</b>

## B. Requirement for Rental Properties

The Air District is proposing this amendment to ensure all rental properties located in natural gas service areas have a permanently installed source of heating that does not burn wood. Through the review of 2009–2013 census data, the Air District estimates approximately 5,000 rental units in the Bay Area use a wood-burning device as their

primary source of heating. The census data does not provide details on whether these rental properties are in areas with or without natural gas service.

To estimate emission reductions, the Air District assumes that 4,700 of these 5,000 rental properties are in areas without natural gas service and are subject to the Sole Source of Heat exemption. The Air District estimates 300 rental properties are located in areas that have natural gas service but landlords do not provide a gas heater, forcing tenants to use a wood-burning device as a primary source of heat. Of the 300 rental properties, one-third of those are assumed to have fireplaces and two-thirds of those are assumed to have uncertified wood stoves. If 300 rental properties that previously only had a wood-burning device as the primary source of heat install a permanent gas-fueled heater, it is estimated that PM<sub>2.5</sub> emissions would be reduced by 17 tpy. Table 8 describes the assumptions and estimated emissions reduction from the proposed amendment.

Table 8. Emissions from Rental Property Retrofits in Areas Served by Natural Gas

# of Devices	Annual PM <sub>2.5</sub> Emissions for the Device	Total Annual PM <sub>2.5</sub> Emissions
Fireplaces (83)	300 lbs	12 tpy
Uncertified Wood Stoves (167)	60 lbs	5 tpy
<b>Estimated Total Emissions Reduced</b>		<b>17 tpy</b>

The Air District anticipates this proposed amendment will have minimal impact for most rental units because a majority of the single-family homes and multi-unit dwellings offered for rent do not rely on wood-burning devices as a primary and sole source of heat. This requirement is proposed to become effective November 1, 2018, which would allow landlords time to prepare and to provide a second form of heat to tenants.

### C. Requirement for New Building Construction

In 2008, the Air District projected 58 tpy of emissions reduction from the requirement that new construction install EPA-certified wood-burning devices. The Air District is currently proposing to strengthen the requirement by prohibiting the installation of any wood-burning device in new building construction, including prohibition of EPA-certified devices. This requirement would continue the downward trend in homes using wood-burning devices that contribute to PM<sub>2.5</sub> emissions. The Air District estimates the proposed requirement would further reduce emissions by 44 tpy. The estimate is based on survey results that indicate the types of fuel Bay Area households burn and the frequency with which the households burn those fuels. These trends were applied to Association of Bay Area Governments (ABAG) future household projections to estimate the emissions reduction.

### D. Ancillary Emission Reductions

#### 1. Strengthen Visible Emissions Limitation



The Air District is unable to calculate the emissions reduction associated with this proposed amendment because of the lack of sufficient data. There are not consistent quantitative correlations between opacity and the mass of particulate matter emitted. This lack of correlation is largely due to the various flow rates from chimneys and stove pipes, combined with changing or variable particulate size and composition. A Ringelmann No. 1 standard (20% opacity), however, is consistent with visible emission standards applied to industrial sources and indicates whether solid fuel combustion is efficient. Air District staff anticipates the cumulative effects of this requirement will contribute to lower local and regional particulate matter concentrations.

## 2. Requirements for Disclosure Documents

The primary reason for proposing the requirement for sale and rental property disclosure documents is to inform the public of the significant health impacts of burning wood and the health hazards of PM<sub>2.5</sub>. The Air District anticipates there will be some emissions reduced from this proposed requirement; however, because it is dependent on personal choice whether to replace a wood-burning device with a cleaner heating option, it is not possible to quantify the emission reductions from this proposed requirement.

## 3. Requirements for Wood Heater Manufacturers and Retailers

U.S. EPA's new updated emission requirements for Title 40, Code of Federal Regulations Part 60, Subpart AAA, require manufacturers and retailers of residential heaters to meet specific emissions rates. For emission reductions associated with the new requirements, please refer to U.S. EPA's website:

<http://www2.epa.gov/residential-wood-heaters/final-new-source-performance-standards-residential-wood-heaters>

# **VII. ECONOMIC IMPACTS**

This section discusses the estimated costs and economic impacts associated with the proposed rule amendments.

## **A. Sole Source of Heat Exemption and Registration**

The proposed amendment to the Sole Source of Heat exemption requires replacement of existing uncertified wood-burning devices with EPA-certified wood heaters and requires registration of those devices with the Air District. This section discusses other heating options that are available; however, for the purposes of this rule, the economic impact is analyzed for the replacement to an EPA-certified wood heater.

### 1. Heating Options and Cost Estimates

Table 9 provides a comparison of the range of heaters that are available and the estimated costs for the different heating options. This table does not include associated cost of installation or building permit fees.

Table 9. Comparison of Heating Options and Estimated Costs

	EPA-CERTIFIED WOOD HEATERS		GAS-FUELED HEATERS		ELECTRIC HEATERS	
Type of Heater	Wood Stove/Insert	Pellet Stove/Insert	*Natural Gas Stove/Insert	Propane Heater	Electric Resistance Heat	Electric Heat Pump
Fuel Cost	\$400/cord	\$250/ton	\$12/MCF	\$2.50/gal	\$0.18/kWh	\$0.18/kWh
Heat Efficiency	70%	78%	78%	78%	100%	300%
Cost of Heating (per MM BTU)	Hard Woods: \$23.24	\$19.43	\$15.38	\$34.34	\$52.79	\$19.16
	Soft Woods: \$36.16					
Cost of Device	\$2,500–\$6,000	\$2,500–\$6,000	\$2,500–\$6,000	\$2,500–\$6,000	\$500–\$2,000	\$5,000–\$10,000+

\*Heating device not applicable in areas without natural gas service.

Although this proposed change requires the replacement to an EPA-certified device and registration in order to qualify for the Sole Source of Heat exemption, the Air District encourages those seeking to replace an existing wood-burning device to also consider other cleaner heating options, such as gas-fueled (i.e., propane heating), or electric heating (i.e., electric heat pumps or other electric heating appliances), because there is not a large degree of cost difference between the various heating devices.

## 2. Heating Efficiencies and Estimated Emission Reductions

It is important to understand the differences in heating efficiencies for the different heating options available, because it can greatly influence overall cost. Residences replacing a fireplace with an EPA-certified heater, which is approximately 60% more efficient than a fireplace, will see significant fuel cost savings. The heat benefits can be further increased by burning harder woods. A higher heating efficiency and more efficient fire leads to more complete combustion, lower emissions, and lower fuel costs. Significant heat benefits also can be achieved by replacing an uncertified wood stove/insert with an EPA-certified wood stove and/or pellet stove; however, those benefits will be less than those of a fireplace versus EPA-certified stove replacement.

Table 10 summarizes the estimated emissions reduction and heating efficiencies when replacing an uncertified wood-burning device with a cleaner, more efficient EPA-certified wood heater.

Table 10. Emission Reduced from Replacement of an Uncertified Heater with an EPA Certified Device

<i><b>FROM</b></i>	<i><b>TO</b></i>	<i><b>Estimated Emissions Reduction</b></i>
Uncertified Wood Stove/Insert (50% efficient)	EPA Certified Wood Stove/Insert (70% efficient)	88.0%
	Pellet Stove/Insert (78% efficient)	90.0%
Fireplace (10% efficient)	EPA Certified Wood Stove/Insert (70% efficient)	97.6%
	Pellet Stove/Insert (78% efficient)	98.0%

The Air District estimates replacement of an existing uncertified wood stove with an EPA-certified heater will cost approximately \$2,500 to \$6,000 for the device. There is a wide variety of EPA-certified heaters and the cost is dependent on the type of heating device selected. Heaters also vary in cost depending on the size of the device, type of fuel, heating efficiencies, and personal style preference. The cost of installation also can vary greatly, because each residence is unique and costs associated with each installation depend on how much retrofitting is required. Typical costs include ducting and structural work. Additionally, local building permits that may be required also range in cost, depending on the city or county.

The Air District estimates that a relatively basic, EPA-certified heater costs \$5,000, including installation, and has the following approximate wood cost savings and cost effectiveness per ton of PM<sub>2.5</sub> emissions reduced:

- By replacing an uncertified wood stove/insert with an EPA-certified wood heater, it is estimated that annual wood cost savings would be \$100 from the 20% heat efficiency increase. Cost effectiveness of this replacement is estimated at \$35,000 per ton of PM<sub>2.5</sub> reduced. The Air District estimates that this proposed exemption amendment would be a cost effective measure to reduce PM<sub>2.5</sub> emissions.
- By replacing a fireplace with an EPA-certified wood heater, it is estimated that annual wood cost savings would be \$300 from the 60% increase in heat efficiency. Cost effectiveness of this replacement is estimated at \$23,000 per ton of PM<sub>2.5</sub> reduced. The Air District estimates that this proposed exemption amendment would be a cost effective measure to reduce PM<sub>2.5</sub> emissions.

Table 11 shows the costs and cost effectiveness of installing an EPA-certified heater based on fuel savings.

Table 11. Cost of Replacing an Uncertified Device with an EPA-Certified Heater

<i>FROM</i>	<i>TO</i>	<i>Wood Cost Savings and Estimated \$ / Ton of PM<sub>2.5</sub></i>
Uncertified Wood Stove/Insert (50% efficient)	EPA Certified Wood Stove (70% efficient)	\$100 wood savings \$35,000 / ton of PM <sub>2.5</sub>
Fireplace (10% efficient)	EPA Certified Wood Stove (70% efficient)	\$300 wood savings \$23,000 / ton of PM <sub>2.5</sub>

### 3. Registration of EPA Certified Wood Heater

The Air District anticipates the registration program to have no cost impacts on residents in the Bay Area as this registration is free and is only required if a an EPA-certified wood heater is used as the primary source of heat during a *Winter Spare the Air Alert*. Sole Source of Heat exemptions are allowed only if no permanently installed gas (i.e., natural gas or propane) or electric heating options are available.

This registration program is voluntary as a household may choose not to claim exemption and not use a wood-burning device during a *Winter Spare the Air Alert*. However, if a person is found to be using an unregistered device when wood-burning is prohibited, that person is in violation of the rule and subject to enforcement action.

A household who claims Sole Source of Heat exemption is required to renew the exemption within 5 years of initial registration.

### **B. Requirement for Rental Properties**

The proposed requirement is anticipated to have minimal economic impact because the Air District expects that a majority of rental units already have a natural gas heater in areas with natural gas. For rental properties in areas that have natural gas service, but only have a wood-burning device as a primary source of heat, the proposed amendment would require landlords to provide a permanently installed source of heat that does not burn wood. For the purposes of determining cost estimates, the Air District assumes a landlord will choose to install a natural gas heater over other available heater options because the rental property has natural gas service.

The replacement of an uncertified wood stove and installation of a 70% heat-efficient natural gas heater costing about \$5,000 (including installation) is estimated to have approximately \$400 in annual wood cost savings. For 21 tpy emissions reduction, the cost effectiveness is estimated at \$27,000 per ton of PM<sub>2.5</sub> reduced. The Air District determines this proposed amendment would be a cost effective measure to reduce PM<sub>2.5</sub> emissions.

Replacing a fireplace that is assumed to be used for heating a rental property and installing a 70% heat efficient, gas-fueled heater costing approximately \$5,000

(including installation) is estimated to result in approximately \$2,000 in annual wood cost savings. For 21 tpy emissions reduction, the cost effectiveness is estimated at \$5,600 per ton of PM<sub>2.5</sub> emissions reduced. Because the heat savings outweigh the cost of the natural gas device, this replacement is extremely cost effective, especially in cases where the new heating device is used exclusively and no wood is burned. The Air District determines this proposed amendment would be a cost effective measure to reduce PM<sub>2.5</sub> emissions; however it must be noted that the population of rental properties affected by this proposed requirement is likely extremely small.

The Air District estimates that the cost to a landlord would be the cost of the permanently installed gas-fueled or electric device, as described in Table 12.

Table 12. Cost of Replacing an Uncertified Device with a Natural Gas Heater

<i>FROM</i>	<i>TO</i>	<i>Wood Cost Savings and Estimated \$ / Ton of PM<sub>2.5</sub></i>
Uncertified Wood Stove/Insert (50% efficient)	Natural Gas Heater (70% efficient)	\$400 wood savings \$27,000 / ton of PM <sub>2.5</sub>
Fireplace (10% efficient)	Natural Gas Heater (70% efficient)	\$2,000 wood savings \$-5,600 / ton of PM <sub>2.5</sub>

### C. Requirement for New Building Construction

The proposed rule amendment would prohibit builders from installing wood-burning devices. New construction could only include installation of devices such as gas-fueled or electric heaters. The Air District anticipates this proposed amendment would have minimal economic impact because the majority of multi-unit construction projects do not install wood-burning devices in order to minimize fire concerns, and new construction can utilize other equivalent gas or electric heating options that are similar in cost. The Air District estimates that there would be no incremental cost associated with this proposed amendment.

### D. Air District Staffing Impacts

The success of Rule 6-3 demands increased staffing across multiple Air District Divisions. Compliance and Enforcement, Communications, Meteorology Measurements and Rules, Strategic Incentives, and Legal collectively work to help ensure the success of this rule. The implementation of this rule and the proposed amendments depend on Air District Meteorologists providing daily forecasts and on Inspectors to respond to complaints and conduct investigations during WSTA alerts. Violations are documented, processed, and reviewed by the Compliance and Enforcement Division, and violation notices or warning letters are reviewed by the Legal Division and penalties are determined. Another key component to the success of Rule 6-3 is the education and outreach efforts conducted by the Communications Division through the robust Winter Spare the Air Program. The Air District's progressive education and outreach help people understand the health impacts associated with

wood smoke and will continue to play a key role in encouraging participation during WSTA alerts and the transition to cleaner heating options. The Air District's Incentives Division will continue to help develop financial incentives to help households obtain cleaner and more efficient heating devices and network with other local agencies to provide similar programs and incentives to improve air quality locally. The following proposed rule amendments will likely demand additional Air District staffing resources within various levels of the District:

- The Fireplace and Chimney Remodel requirement would require staff to reach out to all local cities and counties in the Air District's jurisdiction to ensure enforcement of the proposed change to the rule.
- The proposed rule amendment to prohibit installation of wood-burning devices in new construction would require outreach to builders and local cities and counties to ensure compliance with the new requirement when issuing building permits.
- The requirement for disclosure documents during the sale and for rental properties would require staff to work with real estate, apartment, and rental associations in the nine Bay Area counties to develop language to communicate PM<sub>2.5</sub> hazards.
- The standardization of the Visible Emissions Limitation would likely make it easier for Inspectors to determine which households are not burning cleanly and are exceeding the visible emissions standard. It is expected that easier enforcement of this standard could increase the number of violations documented, which could affect staffing resources for processing and review.
- The registration requirement to claim Sole Source of Heat exemption would be expected to increase staff workloads; however the long-term benefits of the registration program are likely to save staff time and resources. Once households in areas without natural gas register EPA-certified wood-burning devices, the Air District could identify those non-registered or non-exempt households and focus resources to encourage those households to transition to cleaner heating devices. The Air District plans to use existing computer programs to compile registrations and does not expect additional computer hardware/software costs.

## **E. Incremental Costs**

Under California Health and Safety Code Section 40920.6, the Air District is required to perform an incremental cost analysis for a proposed rule under certain circumstances. To perform this analysis, the Air District must (1) identify one or more control options achieving the emission reduction objectives for the proposed rule, (2) determine the cost effectiveness for each option, and (3) calculate the incremental cost effectiveness for each option. To determine incremental costs, the Air District must "calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option."

For the proposed regulation, staff has not identified any incremental costs since the regulation does not impose any one specific control technology. EPA certified devices are the industry standard for new wood-burning devices.



## 1. Point of Sale Requirement

During the public workshops, the Air District presented a point-of-sale concept that would help transition the Bay Area to cleaner and more efficient heating options. The proposed point-of-sale requirement would require all real estate sales and transfers to replace an uncertified wood-burning device with a gas-fueled device, electric device, or EPA-certified wood-burning device. During the rule development process, the Air District received an overwhelming number of comments concerning this proposed real estate requirement. Upon further consideration, the Air District decided to withdraw the proposed real estate requirement.

The Air District withdrew the proposed amendment because the financial burden of retrofitting a fireplace with a gas-fueled, electric, or EPA-certified wood-burning device was estimated to range in cost from \$3,000 to \$6,000, depending on the type of device selected by the homeowner. Emission reductions from converting a fireplace or wood stove to an EPA-certified device are cost effective for homes that burn wood regularly; however, if the homeowner seldom or never burns wood, there are no emission reductions and the cost to convert are not justified.

## **VIII. SOCIOECONOMIC IMPACTS**

Section 40728.5 of the California Health and Safety Code requires an air district to assess the socioeconomic impacts of the adoption, amendment or repeal of a rule if the rule is one that “will significantly affect air quality or emissions limitations.” Bay Area Economics, Berkley, California has prepared a socioeconomic analysis of the proposed amendments to Regulation 6, Rule 3. The analysis came to the following conclusions:

- Affected households, landlords and renters should be able to absorb the costs of compliance with the proposed rule amendments that require a replacement of existing uncertified wood-burning devices and a transition to cleaner heating options.
- There may be a significant economic impact to profit and revenue on small businesses selling firewood due to the estimated reduction in wood burning by 20% from the proposed rule amendments.

## **IX. ENVIRONMENTAL IMPACTS**

Pursuant to the California Environmental Quality Act, the Air District’s environmental consultant, Environmental Audit Inc., conducted a study to determine whether there are any potential significant adverse environmental impacts associated with the rule amendments. The study concludes that there are no significant impacts and a negative declaration is proposed for adoption by the Air District Board of Directors. The study and negative declaration will be circulated for public comment prior to consideration by the Board of Directors.

## **IX. REGULATORY IMPACTS**

Section 40727.2 of the Health and Safety Code requires an air district, in adopting, amending, or repealing an air district regulation, to identify existing federal and district air pollution control requirements for the equipment or source type affected by the proposed change in district rules. The district must then note any differences between these existing requirements and the requirements imposed by the proposed change. Adoption of these rule amendments do not conflict with any existing federal or Air District requirements.

## **XI. RULE AMENDMENT PROCESS**

This rule amendment process included extensive public outreach to ensure as many stakeholders as possible were involved in developing this proposal. Outreach has included the hearth product trade organizations and industry representatives, national and local health organizations, county health and building departments, and members of the public with an interest in wood burning. The outreach efforts also included a series of nine workshops for interested parties and the general public at the end of March and throughout the month of April 2015.

The purpose of the rule amendment workshops was to solicit comments from the public on the concepts proposed in amending Rule 6-3. The nine workshops were conducted in the following cities: Morgan Hill, Redwood City, Napa, Livermore, San Rafael, Santa Rosa, Walnut Creek, Suisun City, and San Francisco.

The Air District published a draft rule and staff report on the proposed amendments and the documents were available for an interim public comment period in mid-August. Public comments received were incorporated into the draft rule and staff report. The following is a summary of the public comments received during the interim public comment period:

- “Sole Source of Heat” definition is too vague and may allow un-intended wood burning during Winter Spare the Air days. Provide clarification in the definition or exemption section.
- “Sole Source of Heat” exemption requirement has significant economic impacts on households.
- Consider additional exemptions for low income households.
- Requiring EPA certified wood heaters to be installed to qualify for “Sole Source of Heat” exemption would encourage and promote the existence of wood burning devices for 30+ years and negatively impact air quality indefinitely.
- Increase enforcement on Winter Spare the Air Days instead of banning wood-burning. Take enforcement action on those gross polluters that do not comply with the rule rather than punish those who comply.
- A 30-day temporary exemption for non-functional heaters does not provide adequate time for households to make repairs.
- “Non-functional, permanently-installed heater” exemption is well-intended,



however, costs associated to repair a broken heater creates economic hardships for seniors or retirees. If a furnace cannot be repaired, a new one will have to be installed and many cannot afford the cost of installing a new device.

- Consider “Regional No Burn Days” versus a District-wide burn restriction.
- Consider a “Two-stage Burn Program” to help encourage households to upgrade to cleaner wood-burning devices.
- The continuation and reliance on wood fuel will have negative impacts on CO<sub>2</sub> emissions and climate change.
- Consider allowing EPA certified devices to be used on Winter Spare the Air days if a permanently installed gas furnace cannot be repaired to qualify for the “non-functional, permanently installed heater” exemption.
- Proposed effective date for real estate and rental disclosure requirement does not provide adequate time for industry to incorporate PM<sub>2.5</sub> health hazards into disclosure documents.
- A household should still qualify for “Sole Source of Heat” exemption even though propane fuel is available to a household.
- Special considerations or exemptions should be made for residents who reside in rural areas.
- Rule 6-3 should ban wood-burning in the Bay Area.
- EPA certified wood heaters should be disallowed as laboratory testing does not reflect actual emissions.
- EPA certified wood heaters are too heavily dependent on the operator and the performance of the device may be easily defeated through adjusting dampers.
- New Building Construction should continue to allow the installation of EPA certified wood heaters to provide consumers the choice of heating options.
- Banning wood-burning devices will have negative consequences during utility service outages where no natural gas or electricity is available.
- Consider exemption for unincorporated areas that are more rural and less densely populated.
- Consider banning the sale of unseasoned wood.
- Wood is a sustainable fuel and wood-burning devices should not be banned.

The Air District will prepare a Hearing Package that will be published on the Air District website and made available for a 30-day public comment period in mid-September. The final rule amendment is scheduled to be presented at an Air District Board of Directors meeting in October 2015 for adoption.

## **XII. CONCLUSION**

Pursuant to Section 40727 of the California Health and Safety Code, the proposed rule amendment must meet findings of necessity, authority, clarity, consistency, non-duplication, and reference. The proposed rule amendment is:

- Necessary to protect public health by reducing particulate matter emissions to meet the requirements of Senate Bill 656 Particulate Matter Implementation Schedule;
- Authorized by California Health and Safety Code Sections 40000, 40001, 40702, and 40725 through 40728;

- Clear, in that the new regulation specifically delineates the affected industry, compliance options, and administrative requirements for industry subject to this rule, so that its meaning can be easily understood by the persons directly affected by it;
- Consistent with other District rules, and not in conflict with state or federal law;
- Non-duplicative of other statutes, rules, or regulations; and
- Implementing, interpreting and making specific the provisions of the California Health and Safety Code sections 40000 and 40702.

### XIII. REFERENCES AND NOTATIONS

- 
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- <sup>2</sup> Bay Area Air Quality Management District. (2012). *Summary of PM Report*. Author.
- <sup>3</sup> Fairly, D. (2014). Analysis of Forest Knolls Aethalometer Data.
- <sup>4</sup> Sonoma Technology, Inc. (2014, June). Characterizing Wood Smoke in Santa Rosa. Retrieved from <http://www.sonomatech.com/project.cfm?uprojectid=1215>
- <sup>5</sup> The designation of the Bay Area as non-attainment for the 24-hour national PM<sub>2.5</sub> standard became effective on December 14, 2009. EPA published a “Determination of Attainment” for the San Francisco Bay Area in the Federal Register indicating that the Bay Area has attained the 2006 24-hour PM<sub>2.5</sub> NAAQS on January 9, 2013, however, the Air District has not yet submitted a redesignation request and maintenance plan to EPA; EPA approves the request.
- <sup>6</sup> Bay Area Air Quality Management District (2012, November). *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area*. Author.

bae urban economics

**Socio-Economic Impact Study of Proposed Amendments to Regulation 6, Rule 3,  
Wood Burning Devices**

Submitted to: Bay Area Air Quality Management District  
September 8, 2015

# bae urban economics

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## EXECUTIVE SUMMARY

### Description of Proposed Rule

The Bay Area Air Quality Management District (“Air District” or “BAAQMD”) proposes to amend Regulation 6, Rule 3 (Rule 6-3) to further reduce emissions of fine particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) and visible emissions from wood-burning devices used as a source of primary or supplemental heat, or ambiance.

During the winter months, wood burning is a major contributing source of PM<sub>2.5</sub> concentration in the Bay Area and wood smoke contributes approximately 30 to 40 percent of PM<sub>2.5</sub> concentrations. Because of the topography and wintertime weather patterns in the Bay Area, and the large number of households burning wood in the region, PM<sub>2.5</sub> concentration can build and result in unhealthy air quality.

Rule 6-3 was originally adopted in 2008, and BAAQMD has implemented multiple strategies to reduce emissions from household wood burning, including a robust enforcement program along with public education and outreach regarding the harmful effects of wood smoke. Rule 6-3 has successfully contributed to a reduction in wood burning by area residents, but PM<sub>2.5</sub> emissions still exceed federal health standards, and wood smoke continues to negatively impact local air quality. As a result, BAAQMD is proposing to amend the Rule in order to further reduce harmful emissions from wood smoke.

The proposed rule amendments would:

- clarify and strengthen the requirements for claiming exemptions;
- adopt new wood heater standards set forth by EPA;
- strengthen the visible emissions limitation;
- require real estate and rental disclosures to communicate the health hazards of PM<sub>2.5</sub>; and
- transition new building construction and rental properties to cleaner heating options.

Following is a brief synopsis of the key changes to Rule 6-3.

### ***Sole Source of Heat Exemption***

The proposed amendment would require that only residences with an EPA-certified wood-burning device which is the only permanently installed source of heat qualify for this exemption. Additionally, a claimant would be required to register that EPA-certified device with



the Air District to receive this exemption. The purpose of this proposal is to ensure that devices used as sole sources of heat are cleaner and more efficient than those previously exempt from the rule. The replacement of older, more polluting, uncertified wood burning devices that are used as primary heating in areas without natural gas is vital to improving air quality.

***Exemption for Non-functional, Permanently Installed Heaters***

The Air District proposes a 30-day exemption to allow temporary use of a wood-burning device during a *Winter Spare the Air Alert* while a repair is being made to the regularly used non-wood heater. This exemption will only apply if a household has no alternate form of heat available, such as gas or electric heating.

***Exemption for Loss of Natural Gas and/or Electric Power***

The current Rule 6-3 has two separate exemptions for temporary gas or electric service outages. These exemptions allow use of a wood-burning device during a *Winter Spare the Air Alert* if there is a loss of natural gas and/or electric power due to natural disasters, such as, but not limited to, earthquakes, fires, floods, storms, or if an outage is due to utility service disruptions. The Air District is proposing to combine these two exemptions sections into one.

***Clarify, Amend, or Add Definitions to Rule***

The proposed changes to definitions in Section 200 of the rule would include a number of new or amended definitions to support amended rule requirements.

***U.S. EPA Requirement for Residential Wood Heaters***

Since adoption of Rule 6-3 in 2008, the Air District has enforced EPA requirements for residential wood heaters such that all wood heaters sold in the Air District must be “EPA Phase II Certified.” On February 3, 2015, EPA updated emission standards for new residential wood heaters and the Air District is proposing to require wood burning devices to meet these new certification requirements. EPA’s new emission standards and five-year compliance schedule for new heaters establishes health-protective measures that ensure manufacturers continue to move toward cleaner technologies and consumers transition to cleaner heater options. Wood heaters currently in use and in homes are not affected by these new emission standards and the standards do not require a replacement or upgrade of existing devices.

***Requirement for Sale, Resale, Transfer or Installation of Wood-Burning Devices***

The current rule prevents the sale, resale, supply, transfer, or installation of non-EPA certified wood-burning devices within the Bay Area. The proposed amendment provision is intended to remove loopholes that allow non-compliant stoves to stay on the market and be sold by the

general public. This requirement applies to both used and new devices; however, the requirement does not apply to a wood-burning device that is an existing installed fixture included in the sale or transfer of real property.

#### ***Visible Emissions Limitation***

The Air District proposes to amend and strengthen the visible emissions standard to be consistent with Regulation 6, Rule 1, General Requirements, for sources of particulate matter. The proposed amendment would shorten the duration of excessive visible emissions to three minutes in any hour. Following a 20-minute start-up allowance for new fires, visible emissions of greater than 20 percent opacity that aggregate to three minutes in any hour would be prohibited. The proposed amendment would make it easier for Air District staff to determine which wood-burning devices are not operating properly and creating excessive smoke.

#### ***Real Estate and Rental Disclosure Requirement***

The Air District is proposing a measure that would require disclosure when selling, leasing, or renting properties with wood-burning equipment, describing the negative health impacts of PM<sub>2.5</sub>.

#### ***Requirement for Rental Properties***

The Air District is proposing a new requirement that all rental properties in areas with natural gas availability include a permanently installed form of heat that does not burn wood or solid fuel. This proposed requirement ensures all landlords provide tenants with a cleaner heating option than burning wood in areas that have natural gas by disallowing all rental properties in areas with natural gas service from claiming the Sole Source of Heat exemption.

#### ***Requirement for New Building Construction***

Rule 6-3 currently allows any new construction of a building or structure to install a wood-burning device that meets EPA certification requirements. The Air District proposes to amend and strengthen this requirement by ensuring new construction in the Bay Area transition to only the cleanest, most efficient heating options, such as, but not limited to, gas-fueled or electric heaters. Under this proposed amendment, new buildings could no longer install a wood-burning fireplace or EPA-certified wood heater.

#### ***Requirement for Fireplace or Chimney Remodels***

The Air District proposes to amend and clarify the requirements regarding remodeling a chimney or fireplace so that only remodels with costs greater than \$15,000 (excluding cost of local building permit) and that require a building permit would trigger the installation of an EPA-certified, gas-fueled, or electric device.

### ***Registration Requirement***

The Air District proposes to establish a new registration program that would require all claimants of Sole Source of Heat exemption to register their EPA certified wood-burning devices. The Air District is proposing a free and voluntary registration program with a requirement to renew the registration every five years.

This proposed registration requirement would provide an inventory of EPA-certified wood-burning devices in geographical areas without natural gas service and allow the Air District to strategically allocate resources to households that are not using EPA-certified devices in areas without natural gas service. This proposed requirement also would allow Air District staff to better address wood smoke concerns in certain communities that do have natural gas service and are using wood-burning devices during WSTA alerts.

### ***Mandatory Burn Ban***

Rule 6-3 prohibits wood-burning in the Bay Area when forecasts indicate PM<sub>2.5</sub> concentrations will reach prescribed unhealthy levels. The Air District does not plan to amend the standard of this requirement; however, the Air District is proposing to amend the name by changing it from “Solid-fuel Burning Curtailment” to “Mandatory Burn Ban.” A name change would effectively communicate to the general public that when a Winter Spare the Air Alert alert is declared, a “Mandatory Burn Ban” is in effect and wood burning is illegal in the Bay Area.

## **Socio-Economic Impacts**

### ***Affected Industries***

The Sole Source of Heat exemption’s requirement for heating system upgrades will lead to additional expenses for households rather than directly for any industry. Changes in household expenditures could result in impacts across all sectors of the economy as households divert income toward meeting this requirement. However, the cost of heating unit replacement could be offset in part by reduced expenditures for fuel due to increased efficiency in fuel use.

The lower fuel consumption would in turn lead to potentially reduced purchases from firewood dealers and reduced revenues at those businesses.

The requirement for replacement of wood-fueled heating devices in rental units where natural gas is available will require landlords to expend funds to upgrade heating systems in certain

rental properties, thus leading to a potential economic impact for these residential property owners.

### ***Impacts on Affected Industries.***

#### *Impacts Related to Household Expenditures*

The most substantial impacts are on the households that will be required to update their current wood-burning heat source to an EPA-approved wood heater. The resulting economic impacts will be due to changes in household spending patterns, as the reductions in expenditures circulate through the economy.

To meet the new requirements for the Sole Source of Heat exemption, households with older wood-burning heat systems will be required to upgrade to an-EPA-certified wood-burning device or to switch to a different heating fuel source. Air District staff estimate the purchase and installation cost of a new EPA-certified heater at between \$2,500 and \$6,000, with a basic heater cost of \$5,000. This cost could be amortized over a number of years, through the use of a home improvement loan. BAE has assumed the use of a five-year loan at eight percent annual interest, based on the cost and typical terms. For the loan for a \$5,000 heater, the annual costs for the term of the loan would be \$1,217.

The heater replacement costs would be offset to some extent by reduced fuel costs due to the use of a more efficient heating system, especially for households using a fireplace; Air District staff has estimated the annual fuel cost savings for those replacing a wood stove at \$100, and \$300 for replacing a fireplace. The net annual costs would be \$917 for replacing an older wood stove, and \$1,117 for replacing a fireplace.

Air District staff estimates that there are approximately 19,000 households in the Air District that use wood as their primary heating fuel, and staff estimates that half of these households will need to upgrade their heating system as a result of the new requirements of the sole source exemption, and further estimates that of these 9,500 households, one third use a fireplace and two-thirds use an uncertified wood stove. Taking the number of households in each category, and multiplying by the annual net cost estimate per household, total annual compliance costs are estimated at \$10.0 million.

The IMPLAN input output model has been used to generate estimates of regional induced impacts resulting from changes in household income affecting revenues across the entire economy, and for the major industry sectors. These impacts are then be compared to total

economic activity and activity by sector to assess the impacts of the return lost due to the implementation of the proposed amendments to Rule 6-3 on overall net income.

The analysis here conservatively assumes that the \$10 million in expenditures by household is entirely lost to the Bay Area, even though this is not likely to be the case; for instance, the construction sector would likely benefit as contractors are hired to install new heating systems. Even as a complete reduction, however, the impacts are a “drop in the bucket” relative to the overall size of the Bay Area economy. The estimated impacts of the assumed reduction in available household income as a share of total profits by major industry sector is insignificant across all sectors, with no sector showing a reduction in annual profits of even one-tenth of one percent. This loss of profit is far below the 10 percent ARB threshold. It should also be noted that this is a one-time non-recurring impact.

#### *Impacts on Firewood Dealers*

Firewood dealers may see direct impacts on sales due to the replacement of older wood-burning heating systems (including fireplaces and non-EPA-certified wood stoves) with more efficient EPA-certified wood heating systems. The amendments to Rule 6-3 would require a number of households to upgrade their current wood-burning device to a newer unit, and thus there would be costs and economic impacts to the households affected. However, using the newer more efficient devices would lead to energy cost savings since they would require lower fuel consumption. As a result, firewood dealers may face lower sales and reduced revenues.

Firewood dealers are part of the category defined in the North American Industry Classification System (NAICS) as “Fuel Dealers,” an industry comprising “establishments primarily engaged in retailing heating oil, liquefied petroleum (LP) gas, and other fuels via direct selling,” in NAICS category 454310. There are very few establishments in the Other Fuel Dealers category. According to the 2012 Economic Census, there were only 22 establishments in this category in all of California, and only eight in the San Jose-San Francisco-Oakland Combined Statistical Area (CSA), which encompasses the Air District’s region. Based on the data available, the dealers in the state employed only 79 workers, and the CSA’s dealers employed a total of between 20 and 79 employees.

BAAQMD also queried Dun & Bradstreet data and obtained the following list of firewood dealers in the Bay Area. This query shows 17 dealers, with 71 employees and annual revenues estimated at approximately \$7.9 million. While this information varies somewhat from the Economic Census, it confirms that there are a limited number of firewood dealers in the Bay Area, and that they have limited employment.

Firewood dealers have very limited costs related to compliance with the amended Rule; the only costs might relate to labelling wood as seasoned/non-seasoned, but these costs should be minimal and are not considered here. The significant losses are related to decreased business, not compliance costs. The savings in fuel costs for households is in turn a loss of revenue for firewood dealers. Based on the same assumptions as used in the analysis of impacts on households, the annual loss in revenue for firewood dealers in the Bay Area is estimate at approximately \$1.6 million.

Assuming that firewood dealer expenses are directly proportional to revenues, net income and profits would decline by the same percentage. The assumption of direct proportionality is conservative in estimating impacts; while some costs (obtaining the firewood at wholesale or otherwise, and staffing levels to some degree) will decrease with lower sales, other costs, such as rent or property taxes, are fixed such that operating expenses would actually not decline proportionally, and net income would decrease more than gross revenues on a proportional basis. Thus an assumed decline of 20 percent in net income is a conservative estimate, and this conservative estimate of loss is greater than the ARB 10 percent threshold used by BAAQMD as a proxy for burden, so a 20 percent or greater loss indicates that the proposed costs related to compliance have the potential for significant adverse economic impacts.

IMPLAN has been used to assess any indirect and induced impacts from these lost revenues. Given the likely small size of this lost revenue relative to the overall economy, these impacts are not substantial. The overall economic loss amounts to less than six jobs, and less than \$1 million in annual output. Over half of the impacts are direct impacts for the firewood dealers.

#### *Impacts on Rental Property Owners*

As a result of the amendments to Rule 6-3, rental property owners with housing units heated using wood as a fuel will be required to switch to natural gas or another non-solid fuel heat source in areas where natural gas is available. The number of affected properties is assumed to be extremely low, since most rental properties in areas with natural gas service already do not use wood as a heat source. The Air District estimates that approximately 250 properties would be affected by the rule change mandating a conversion away from wood heaters in rental units located in areas with natural gas availability.

The business of renting these properties falls in NAICS 53110, Lessors of Residential Buildings and Dwellings. This sector has a high proportion of nonemployer businesses, likely due to a large number of small landlord sole proprietors and partnerships that own a limited number of buildings and handle the business themselves, or through independent contractors (e.g., a separate property management firm). Overall as of 2012, the ABAG nine-county region

has a total of 22,478 establishments engaged in this line of business, of which 20,284 have no employees. Even if each of the estimated 250 impacted units in the Air District is operated by a separate entity, this still only constitutes approximately 1.3 percent of the establishments.

Among the establishments with employees, there are a total of approximately 10,000 workers who are directly employed. The nonemployers tend to have much lower revenues per establishment, another indicator that they tend to control fewer rental units than the employers. Overall, the establishments in the ABAG Region reported gross revenues of approximately \$7.8 billion in 2012.

To meet the new requirements that rental properties heating with wood in areas with natural gas availability switch over to a non-solid fuel source (most likely gas), landlords will be required to install gas furnaces or other new heating systems that do not rely on wood for fuel. Air District staff estimate the purchase and installation cost of a new gas heater at between \$2,500 and \$6,000, with a basic heater cost of \$5,000. This cost is assumed to be amortized over the lifetime of the heating system. For a \$5,000 heater, the annual amortization is assumed to be \$539.

The heater replacement costs would be offset by reduced fuel costs due to the use of a more efficient heating system, but the analysis here conservatively assumes that tenants are responsible for fuel costs, so those savings would accrue to the tenants. For the 250 units assumed to be affected, the estimated total annual compliance costs are approximately \$135,000.

The analysis indicates that a typical property owner would see a reduction of approximately 9.2 percent in net income, below the ARB 10 percent threshold deemed significant. It should be noted that many of the assumptions regarding rents and tenant responsibility for fuel costs, are conservative; for example if utility savings go to the tenant, the property owners may be able to increase contract rents to pass through the costs of installing the new heating system, or if the property owner is responsible for heating fuel costs, the savings through switching from wood to gas would go to the landlord, reducing the compliance costs.

Based on an IMPLAN analysis the indirect and induced impacts from these compliance costs are trivial, amount to less than one job and only \$43,500 annually in indirect and induced output in the entire Bay Area economy.

### ***Impacts on Small Businesses***

According to California Government Code 14835, a small business is any business that meets the following requirements:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;
- Must have its principal office located in California;
- Must have its owners (or officers in the case of a corporation) domiciled in California; and
- Together with its affiliates, be either:
  - A business with 100 or fewer employees, and an average annual gross receipts of \$10 million or less over the previous three tax years, or
  - A manufacturer with 100 or fewer employees.

### ***Household Impacts***

The direct impacts here are on households, not businesses. The induced impacts from an assumed reduction in household expenditures are spread across the entire economy and are very small, and impacts at small businesses are assumed at the same level.

### ***Firewood Dealers***

Assuming these establishments are independently owned, they would all meet the criteria of California Government Code 14835 for categorization as small businesses, based on having 100 or fewer employees and annual revenues of less than \$10 million, because even as a group they have fewer employees and less revenue than these thresholds. As discussed above, based on impacts on profits, there is the potential for significant impacts for any of these businesses meeting the definition of a small business. However, overall it should be noted that this is a very limited number of businesses with few employees and limited revenues.

### ***Residential Rental Property Owners***

While no information was gathered on how many of the affected properties were owned by small businesses, the data indicate that many property owners have no employees at all, and small residential properties are often owned by individuals or small investor partnerships. In some cases, residences are rented by former owner-occupants who continue to hold the property. In the most extreme scenario, all 250 of the affected properties would be owned by small businesses as defined above according to California Government Code 14835.



However, the analysis indicates that the impacts of the proposed rule amendment requiring the replacement of wood heating sources would not see a drop in profits that would reach significant levels for a typical landlord, in an analysis that is conservative and also does not account for potential long-term capital gains.

## DESCRIPTION OF PROPOSED RULE AMENDMENT

The Bay Area Air Quality Management District (“Air District” or “BAAQMD”) proposes to amend Regulation 6, Rule 3 (Rule 6-3) to further reduce emissions of fine particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) and visible emissions from wood-burning devices used as a source of primary or supplemental heat, or ambiance.

During the winter months, wood burning is a major contributing source of PM<sub>2.5</sub> concentration in the Bay Area and wood smoke contributes approximately 30 to 40 percent of PM<sub>2.5</sub> concentrations. Because of the topography and wintertime weather patterns in the Bay Area, and the large number of households burning wood in the region, PM<sub>2.5</sub> concentration can build and result in unhealthy air quality.

Rule 6-3 was originally adopted in 2008, and BAAQMD has implemented multiple strategies to reduce emissions from household wood burning, including a robust enforcement program along with public education and outreach regarding the harmful effects of wood smoke. Rule 6-3 has successfully contributed to a reduction in wood burning by area residents, but PM<sub>2.5</sub> emissions still exceed federal health standards, and wood smoke continues to negatively impact local air quality. As a result, BAAQMD is proposing to amend the Rule in order to further reduce harmful emissions from wood smoke.

The proposed rule amendments would:

- clarify and strengthen the requirements for claiming exemptions;
- adopt new wood heater standards set forth by EPA;
- strengthen the visible emissions limitation;
- require real estate and rental disclosures to communicate the health hazards of PM<sub>2.5</sub>; and
- transition new building construction and rental properties to cleaner heating options.

This section describes the proposed amendments in more detail, largely repeating information found in the Staff Report describing the proposed amendments.<sup>1</sup>

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<sup>1</sup> From BAAQMD Staff Report, "Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices - Proposed Amendments," henceforth referred to as the "Staff Report," August 10, 2015.

## **A. Sole Source of Heat Exemption**

In Rule 6-3, a wood-burning device may be used during a *Winter Spare the Air (WSTA) Alert* if that wood-burning device is the only source of permanently installed heat. BAAQMD proposes to amend the Sole Source of Heat exemption to strengthen and clarify the conditions for qualification. The proposed amendment would require that only residences with an EPA-certified wood-burning device which is the only permanently installed source of heat qualify for this exemption. Additionally, a claimant would be required to register that EPA-certified device with the Air District to receive this exemption. (See below for a discussion of BAAQMD's proposed new registration program.)

The purpose of this proposal is to ensure that devices used as sole sources of heat are cleaner and more efficient than those previously exempt from the rule. Wood stoves tend to last a long time and are replaced less frequently than other major appliances; so many older, uncertified wood-burning devices are still used regularly for heating. For this reason, the replacement of older, more polluting, uncertified wood burning devices that are used as primary heating in areas without natural gas is vital to improving air quality.

## **B. Exemption for Non-functional, Permanently Installed Heaters**

Rule 6-3 currently does not provide an exemption for non-functional heaters and does not address concerns where a wood-burning device may be the only source of heat available until the primary heater is repaired. The Air District proposes a 30-day exemption to allow temporary use of a wood-burning device during a *Winter Spare the Air Alert* while a repair is being made to the regularly used non-wood heater. This exemption will only apply if a household has no alternate form of heat available, such as gas or electric heating. The proposal would require claimants to submit repair documentation for verification upon request by the Air District within ten days.

## **C. Exemption for Loss of Natural Gas and/or Electric Power**

The current Rule 6-3 has two separate exemptions for temporary gas or electric service outages. These exemptions allow use of a wood-burning device during a *Winter Spare the Air Alert* if there is a loss of natural gas and/or electric power due to natural disasters, such as, but not limited to, earthquakes, fires, floods, storms, or if an outage is due to utility service disruptions. The Air District is proposing to combine these two exemptions sections into one and require that service outages must be verifiable by the local utility service provider.

## **D. Clarify, Amend, or Add Definitions to Rule**

The proposed changes to definitions in Section 200 of the rule would include a number of new or amended definitions to support amended rule requirements.

## **E. U.S. EPA Requirement for Residential Wood Heaters**

Since adoption of Rule 6-3 in 2008, the Air District has enforced EPA requirements for residential wood heaters such that all wood heaters sold in the Air District must be “EPA Phase II Certified.” On February 3, 2015, EPA updated emission standards for new residential wood heaters and the Air District is proposing to require wood burning devices to meet these new certification requirements. EPA’s new emission standards and five-year compliance schedule for new heaters establishes health-protective measures that ensure manufacturers continue to move toward cleaner technologies and consumers transition to cleaner heater options. Wood heaters currently in use and in homes are not affected by these new emission standards and the standards do not require a replacement or upgrade of existing devices.

## **F. Requirement for Sale, Resale, Transfer or Installation of Wood-Burning Devices**

The current rule prevents the sale, resale, supply, transfer, or installation of non-EPA certified wood-burning devices within the Bay Area. The purpose of this requirement is to ensure that no member of the general public sells or purchases wood-burning devices that are not EPA certified. The proposed amendment provision is intended to remove loopholes that allow non-compliant stoves to stay on the market and be sold by the general public. This requirement applies to both used and new devices; however, the requirement does not apply to a wood-burning device that is an existing installed fixture included in the sale or transfer or real property.

## **G. Visible Emissions Limitation**

Visible emissions that exceed 20 percent opacity from chimneys, stovepipes, or flues based on visual observation for at least six consecutive minutes in any one-hour period are not allowed under the current Rule 6-3. This requirement does not apply to the startup of a new fire for 20 minutes in any four-hour period.

The Air District proposes to amend and strengthen the standard to be consistent with Regulation 6, Rule 1, General Requirements, for sources of particulate matter. The proposed amendment would shorten the duration of excessive visible emissions to three minutes in any hour. Following a 20-minute start-up allowance for new fires, visible emissions of greater than 20 percent opacity that aggregate to three minutes in any hour would be prohibited. This requirement does not apply to the startup of a new fire for 20 minutes in any four-hour period. The proposed amendment would make it easier for Air District staff to determine which wood-burning devices are not operating properly and creating excessive smoke.

## **H. Real Estate and Rental Disclosure Requirement**

The purpose of Rule 6-3 is to limit emissions of particulate matter and visible emissions from wood-burning devices to protect air quality and public health. The Air District is proposing a measure that would require disclosure when selling, leasing, or renting properties with wood-burning equipment, describing the negative health impacts of PM<sub>2.5</sub>.

## **I. Requirement for Rental Properties**

The Air District is proposing a new requirement that all rental properties in areas with natural gas availability include a permanently installed form of heat that does not burn wood or solid fuel. This proposed requirement ensures all landlords provide tenants with a cleaner heating option than burning wood in areas that have natural gas by disallowing all rental properties in areas with natural gas service from claiming the Sole Source of Heat exemption.

## **J. Requirement for New Building Construction**

Rule 6-3 currently allows any new construction of a building or structure to install a wood-burning device that meets EPA certification requirements. The Air District proposes to amend and strengthen this requirement by ensuring new construction in the Bay Area transition to only the cleanest, most efficient heating options, such as, but not limited to, gas-fueled or electric heaters. Under this proposed amendment, new buildings could no longer install a wood-burning fireplace or EPA-certified wood heater.

## **K. Requirement for Fireplace or Chimney Remodels**

Rule 6-3 currently requires the installation of a gas-fueled, electric, or EPA-certified wood-burning device as part of a remodel of a fireplace or chimney, when that remodel construction requires a local building permit. The current requirement of the rule is vague and may unreasonably require any fireplace or chimney remodel, regardless of the scale or scope of the remodel job, to install an EPA-certified device.

The Air District proposes to amend and clarify this requirement so that only remodels with costs greater than \$15,000 (excluding cost of local building permit) and that require a building permit would trigger the installation of an EPA-certified, gas-fueled, or electric device. Enforcement of this provision would be by the local city or county where the building permit is received.

## **L. Registration Requirement**

The Air District proposes to establish a new registration program that would require all claimants of Sole Source of Heat exemption to register their EPA certified wood-burning

devices. The Air District is proposing a free and voluntary registration program with a requirement to renew the registration every five years. Registrants would be required to maintain all documents that verify Sole Source of Heat exemption status and would be required to be able to demonstrate that registered devices are operated according to manufacturer's specifications.

This proposed registration requirement would provide an inventory of EPA-certified wood-burning devices in geographical areas without natural gas service and allow the Air District to strategically allocate resources to households that are not using EPA-certified devices in areas without natural gas service. This proposed requirement also would allow Air District staff to better address wood smoke concerns in certain communities that do have natural gas service and are using wood-burning devices during WSTA alerts.

### **M. Mandatory Burn Ban**

Rule 6-3 prohibits wood-burning in the Bay Area when forecasts indicate PM<sub>2.5</sub> concentrations will reach prescribed unhealthy levels. This requirement is currently named in the rule as "Solid-fuel Burning Curtailment."

The Air District does not plan to amend the standard of this requirement; however, the Air District is proposing to amend the name by changing it from "Solid-fuel Burning Curtailment" to "Mandatory Burn Ban." A name change would effectively communicate to the general public that when a WSTA alert is declared, a "Mandatory Burn Ban" is in effect and wood burning is illegal in the Bay Area.

## REGIONAL TRENDS

This section provides background information on the demographic and economic trends for the nine-county San Francisco Bay Area, which represents the Air District’s jurisdiction.<sup>2</sup> Regional trends are compared to statewide demographic and economic patterns since 2000, in order to show the region’s unique characteristics relative to the State.

### Regional Demographic Trends

Table 1 shows the population and household trends for the nine county Bay Area and California between 2000 and 2015. During this time, the Bay Area’s population increased by 10.7 percent, compared to 14.3 percent for California as a whole. Similarly, the number of Bay Area households grew by 8.5 percent, compared to 11.5 percent growth statewide, as average household size increased in both geographies.

**Table 1: Population and Household Trends, 2000-2015**

<u>Bay Area (a)</u>	<u>2000</u>	<u>2015</u>	<u>Total Change 2000-2015</u>	<u>% Change 2000-2015</u>
<b>Population</b>	6,784,348	7,510,942	726,594	10.7%
<b>Households</b>	2,466,020	2,675,537	209,517	8.5%
<b>Average Household Size</b>	2.69	2.75		
<b>California</b>				
<b>Population</b>	33,873,086	38,714,725	4,841,639	14.3%
<b>Households</b>	11,502,871	12,830,035	1,327,164	11.5%
<b>Average Household Size</b>	2.87	2.95		

Notes:

(a) Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

Sources: California State Department of Finance, 2015; US Census, 2000; BAE 2015.

The Bay Area’s slower growth is tied to its relatively built-out environment, compared to the state overall. While Central Valley locations, such as the Sacramento region, experienced large increases in the number of housing units, the Bay Area only experienced moderate increases in housing units.

<sup>2</sup> The Air District’s jurisdiction consists of nine counties, including all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, as well as the western portion of Solano County and the southern portion of Sonoma County. See <http://www.arb.ca.gov/app/dislookup/dislookup.php>

## **Regional Economic Trends**

Table 2 shows jobs by sector in 2009 and 2014 for the Bay Area and California. In the five-year period between 2009 and 2014, the Bay Area's employment base grew by 12.7 percent, increasing from 3.10 million jobs to 349 million jobs, as the economy has recovered from the depths of the Great Recession. The state saw somewhat smaller job growth, increasing by 8.9 percent from 14.75 million jobs in 2009 to 16.06 million jobs in 2014.

The largest non-government sectors in the Bay Area economy are Health Care and Social Assistance; Professional, Scientific, & Technical Services; Retail Trade; Accommodation and Food Services; and Manufacturing. The first two sectors each constituted 10 percent or more of the region's total jobs in 2014, with the latter three falling just below that threshold. Overall, the Bay Area's economic base largely reflects the state's base, sharing a similar distribution of employment across sectors. One noteworthy variation is the high employment in the Professional, Scientific, & Technical Services, which makes up 11.2 percent of employment in the Bay Area compared to only 7.4 percent statewide.

Most industry sectors showed an increase in employment in the Bay Area between 2009 and 2014, with increases of greater than 20 percent in Information; Professional, Scientific, & Technical Services; Management of Companies and Enterprises; Administrative and Waste Services; Educational Services; and Accommodation and Food Services. Most of these sectors are associated with the technology economy. Statewide, only one sector, Administrative and Waste Services, grew more than 20 percent over the five-year period. It is noteworthy that over the same period, government employment declined slightly in both the Bay Area and California.

In large part, the impacts of the proposed amendments to Rule 6-3 will fall on households burning wood either as a heat source or for ambiance, rather than on particular industries. Two small subsectors that might be affected are Direct Selling Firewood Dealers (a subset of NAICS 454310, Fuel Dealers) who could see sales decline due to the replacement of wood stoves and fireplaces with either more efficient wood-burning appliances or heaters using other non-solid fuel sources such as natural gas and electricity. Additionally, rental property owners required to replace wood-burning heat sources with cleaner fuels could also be affected.



**Table 2: Jobs by Sector, 2009-2014 (a)**

Industry Sector	Bay Area					California				
	2009 (b)		2014 (c)		% Change 2009-2014	2009 (b)		2014 (c)		% Change 2009-2014
	Jobs	% Total	Jobs	% Total		Jobs	% Total	Jobs	% Total	
Agriculture	21,300	0.7%	21,600	0.6%	1.4%	371,800	2.5%	417,200	2.6%	12.2%
Mining and Logging	2,000	0.1%	1,800	0.1%	-10.0%	26,100	0.2%	31,300	0.2%	19.9%
Construction	135,000	4.4%	152,700	4.4%	13.1%	623,100	4.2%	675,400	4.2%	8.4%
Manufacturing	312,500	10.1%	320,100	9.2%	2.4%	1,283,600	8.7%	1,269,600	7.9%	-1.1%
Wholesale Trade	114,000	3.7%	122,300	3.5%	7.3%	645,300	4.4%	715,100	4.5%	10.8%
Retail Trade	299,200	9.7%	324,000	9.3%	8.3%	1,522,500	10.3%	1,633,800	10.2%	7.3%
Transportation, Warehousing, and Utilities	92,200	3.0%	100,600	2.9%	9.1%	474,500	3.2%	522,200	3.3%	10.1%
Information	111,300	3.6%	146,000	4.2%	31.2%	441,300	3.0%	457,900	2.9%	3.8%
Finance and Insurance	112,000	3.6%	114,400	3.3%	2.1%	528,100	3.6%	518,400	3.2%	-1.8%
Real Estate and Rental and Leasing	45,700	1.5%	50,000	1.4%	9.4%	254,900	1.7%	265,900	1.7%	4.3%
Professional, Scientific, and Technical Services	304,300	9.8%	390,400	11.2%	28.3%	1,013,600	6.9%	1,187,000	7.4%	17.1%
Management of Companies and Enterprises	58,300	1.9%	70,500	2.0%	20.9%	199,900	1.4%	225,200	1.4%	12.7%
Administrative and Waste Services	159,700	5.2%	196,700	5.6%	23.2%	850,200	5.8%	1,021,200	6.4%	20.1%
Educational Services	76,400	2.5%	93,900	2.7%	22.9%	304,300	2.1%	355,300	2.2%	16.8%
Health Care and Social Assistance	357,100	11.5%	422,000	12.1%	18.2%	1,739,600	11.8%	2,059,000	12.8%	18.4%
Arts, Entertainment, and Recreation	31,200	1.0%	35,900	1.0%	15.1%	244,900	1.7%	277,000	1.7%	13.1%
Accommodation and Food Services	262,800	8.5%	320,200	9.2%	21.8%	1,258,100	8.5%	1,480,100	9.2%	17.6%
Other Services, except Public Administration	104,200	3.4%	116,700	3.3%	12.0%	486,100	3.3%	539,800	3.4%	11.0%
Government (d)	455,700	14.7%	445,800	12.8%	-2.2%	2,479,600	16.8%	2,411,000	15.0%	-2.8%
<b>Subtotal (e)</b>	<b>3,055,000</b>	<b>98.7%</b>	<b>3,445,500</b>	<b>98.7%</b>	<b>12.8%</b>	<b>14,747,600</b>	<b>100.0%</b>	<b>16,062,300</b>	<b>100.0%</b>	<b>8.9%</b>
Additional Suppressed Employment (f)	40,800	1.3%	44,300	1.3%	8.6%	n/a	n/a	n/a	n/a	
<b>Total, All Employment (e)</b>	<b>3,095,800</b>	<b>100.0%</b>	<b>3,489,800</b>	<b>100.0%</b>	<b>12.7%</b>	<b>14,747,600</b>	<b>100.0%</b>	<b>16,062,300</b>	<b>100.0%</b>	<b>8.9%</b>

Notes:

(a) Includes all wage and salary employment.

(b) Represents annual average employment for calendar year 2009.

(c) Represents annual average employment for calendar year 2014.

(d) Government employment includes workers in all local, state and Federal workers, not just those in public administration. For example, all public school staff are in the Government category.

(e) Totals may not sum from parts due to independent rounding.

(f) County employment for some industries in some counties was suppressed by EDD due to the small number of firms reporting in the industry for a given county. Additionally, Santa Clara data is for MSA, which includes San Benito County. As of 2014, San Benito had approximately 16,100 wage and salary jobs, an insignificant number relative to the Bay Area total.

Sources: California Employment Development Department, 2015; BAE, 2015.

## AFFECTED INDUSTRIES

As discussed previously, there are several amendments being proposed to Rule 6-3. The following discussion considers each of the topic areas, and assesses which industries might be adversely impacted.

### **A. Sole Source of Heat Exemption**

The proposed amendment would require that, in order to obtain the sole source of heat exemption, households would be required to use an EPA-certified wood-burning device. Additionally, these households would be required to register that device with the Air District. Thus, the greatest impacts for this rule change would be on households rather than directly on any industry. Changes in household expenditures could result in impacts across all sectors of the economy as households increase or decrease their spending on heating their residences. The analysis in the next section will consider these impacts by major sector across the regional economy.

The lower fuel consumption would in turn lead to potentially reduced purchases from firewood dealers, so the analysis here will consider potential impacts on those dealers. The makeup of this industry is described in more detail in the impacts section below.

### **B. Exemption for Non-functional, Permanently Installed Heaters**

This proposed exemption permits the temporary operation of wood-burning devices in an emergency situation where no other heat source is available. Since there is no cost to consumers associated with this rule change, there should be no resulting economic impacts.

### **C. Exemption for Loss of Natural Gas and/or Electric Power**

The change proposed here is largely a combination of two current exemptions to wood-burning restrictions, and adds only a verification component. There should be no economic impact resulting from these modifications to Rule 6-3.

### **D. Clarify, Amend, or Add Definitions to Rule**

These changes are being made to support other amended rule requirements, so no economic impacts would be associated with these actions.

### **E. U.S. EPA Requirement for Residential Wood Heaters**

This rule requires that new/replacement wood heaters are required to meet certain EPA standards as the standards are tightened, but there is no requirement that older stoves be replaced by a certain date. There should be no significant economic impacts relating to this rule amendment.

### **F. Requirement for Sale, Resale, Transfer or Installation of Wood-Burning Devices**

This proposed amendment further restricts the types of stoves that the general public can sell, transfer, or install in the Bay Area, removing some non-compliant stoves from the market. There

should be no significant economic impacts relating to this rule amendment, given that the current rules are already fairly restrictive, and other requirements of Rule 6-3 mandate that these types of wood burning devices already cannot be installed as replacements for existing units, and furthermore, the rule does not require the replacement of a unit when it is a fixed part of the sale of a home.

### **G. Visible Emissions Limitation**

This new stricter limitation allows the Air District staff to more easily detect wood-burning devices that are not operating properly. For household burning properly seasoned wood, especially in a properly operating EPA-approved unit, this restriction should not generate additional costs. As a result, only households without a sole source exemption may be impacted. These households would have the option to stop using a fireplace or stove that was not properly operating, or to use only properly seasoned wood, and thus are not facing mandatory costs related to the amendment.

### **H. Real Estate and Rental Disclosure Requirement**

This is an administrative requirement that should have no economic impacts associated with it.

### **I. Requirement for Rental Properties**

This amendment would mandate the use of heat sources that do not burn wood or other solid fuel in rental properties in locations where natural gas is available. Rental properties in these locations would no longer be able to claim the Sole Source of Heat exemption.

This new requirement will require landlords to expend funds to upgrade heating systems in certain rental properties, thus leading to a potential economic impact for these residential property owners. It will also impact any businesses currently selling firewood or other fuel for use at these properties. Additionally, renters at these residences who pay for their heat will see a change in their fuel costs; this change is likely to be beneficial, with reduced costs related to a change in fuel and a more efficient heating system.

The Air District estimates that only approximately 250 units would be affected by this rule, and have proposed that the requirement become effective on November 1, 2018, providing landlords ample time to switch to another source of heat.

### **J. Requirement for New Building Construction**

This restriction on the installation of wood-burning fireplaces in new construction should have no direct adverse economic impact on households. There are no new costs, with potential construction savings resulting from the elimination of a home feature from new houses. It also ensures long-term savings on energy costs for the residents.

### **K. Requirement for Fireplace or Chimney Remodels**

This amendment and clarification of an existing rule actually clarifies that the requirement is limited to a smaller set of households, and thus should have no adverse economic impact; in fact,

households with fireplace or chimney repairs costing less than \$15,000 are now clearly not required to spend money to modify their fireplace or other wood heat source.

### **L. Registration Requirement**

This requirement in and of itself only requires households to register their EPA-certified wood-burning devices and requires minimal paperwork with no fee required, and in and of itself should have no economic impact. The impacts are related to the requirement that a Sole Source of Heat exemption will only be given for EPA-certified devices. The potential economic impacts of that rule amendment are discussed above.

### **M. Mandatory Burn Ban**

This rule change is only a name change to a standard, and thus has no industry impacts.

## SOCIO-ECONOMIC IMPACTS

This section describes the direct impacts on households, firewood dealers, and owners of residential rental property due to compliance costs and other costs associated with the proposed rule amendments. In order to estimate the economic impacts of amending Rule 6-3 on the relevant industries, this report assesses the impacts of the potential loss of household expenditures overall, the potential loss of sales at firewood dealers, and the relative cost to property owners related to the requirement to switch rental units to other fuels such as natural gas.

The implementation of the amendments to Rule 6-3 should result in lower household energy costs as more efficient heating systems are installed, whether EPA-approved wood-burning heaters, natural gas, or other types of newer systems, especially for households heating via fireplaces. These savings are considered in the analysis of direct impacts on households.

In addition to direct impacts, the changes in household expenditure patterns and any decline in revenues for the directly affected industries will result in a “ripple effect” through the regional economy. These effects are analyzed by utilizing the IMPLAN input-output model.

### ***IMPLAN Input-Output Model***

Economists use regional and national input-output models as a tool to understand the complex interactions among the various parts of an economy. The economic model used in this analysis, IMPLAN, is a software package that automates the process of developing input-output models for regions within the United States. The IMPLAN model is well-respected as an industry standard for estimating economic impacts resulting from current or hypothetical economic activities, often called “events.”

At the heart of the IMPLAN model is a county-level trade flow called the Social Accounting Matrix (SAM) constructed from the production functions of 536 industries, using data from a variety of sources including the Bureau of Economic Analysis, Bureau of Labor Statistics, and US Census. The SAM uses each county’s observed economic relationships between government, industry, and household sectors, allowing IMPLAN to model payments between industries, between households and industries, between government and industries, and between government and households. Thus, for a specified region, the input-output table accounts for all of the dollar flows between the different sectors within the economy.

Economic impacts as measured by IMPLAN are categorized as direct, indirect, and induced economic activity (defined in terms of jobs and total spending). Induced impacts are those resulting from household spending, and thus are the subject of the analysis proposed here.

- **Direct Impacts.** Direct impacts refer to the set of producer or consumer expenditures applied to the predictive model for impact analysis. IMPLAN then displays how the local economy will respond to these initial changes.

- **Indirect Impacts.** The indirect impacts refer to the impact of local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain until all money leaks from the local economy, either through imports or by payments to income and taxes. The analysis of household spending undertaken here does not analyze these impacts, since the impacts resulting from household expenditures are not in this category.
- **Induced Impacts.** The induced impacts refer to an economy's response to an initial change (direct impact) that occurs through re-spending of income according to household spending patterns. When households earn income, they spend part of that income on consumer goods and services. IMPLAN models households' income spending patterns and distributes them through the local economy. These impacts are analyzed here.

For this analysis, BAE is actually assessing the potential loss of spending power as households have to spend earnings on upgrading their heating systems, net of the fuel cost savings resulting from having a more efficient heating system. In addition, the indirect and induced impacts resulting from declining revenues for firewood dealers and compliance costs for residential rental property owners are estimated.

## **Impacts Related to Household Expenditures**

The most substantial impacts are on the households that will be required to update their current wood-burning heat source to an EPA-approved wood heater. The resulting economic impacts will be due to changes in household spending patterns, as the reductions in expenditures circulate through the economy.

More specifically, the analysis here uses IMPLAN, as described above. IMPLAN software models the way income in one sector is spent and then re-spent in other sectors of the economy, generating waves of economic activity, known as "economic multiplier" effects. For this analysis, BAE will assess the difference between these multiplier effects due to the changes in household expenditures related to the costs and savings associated with the amendments to Rule 6-3.

This analysis conservatively assumes that for the additional household expenditures required to comply with the amended Rule, particularly with the requirement to use an EPA-compliant heater to get the sole source exemption, these expenditures will be lost to the Bay Area, even though it is likely that at least some if not most household will be purchasing new heating units in the Bay Area and using local contractors for the installation. Thus the impact estimate may slightly overestimate the impacts on businesses in the Air District. As will be shown below, these impacts are still extremely small.

### **Economic Profile**

The IMPLAN model also generates estimates of overall economic activity and output/revenue for each of its 536 sectors and for the entire regional economy. This information will provide overall revenues for the Bay Area economy by sector to use in the analysis of rate of return.

### **Estimated Rate of Return**

In its report on returns of active corporations, the Internal Revenue Service (IRS) provides annual data on total sales and net income for public companies across the broad spectrum of the private sector. For this analysis, 10-year averages were used such that the impacts of any particular year's performance due to economic fluctuations are lessened. Overall, the ratio of net income to total receipts across all active corporations is 6.0 percent on average for the 2003 to 2012 period.

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**Table 3: Returns on Total Receipts for All Industries, 2003-2012, for Active Corporations**

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<b>All Industries</b>	<b>Total Receipts 2003-2012 (in \$000)</b>	<b>Net Income 2003-2012 (in \$000)</b>	<b>Net Income as % of Total Receipts</b>
2003	\$4,232,565,964	\$213,681,780	5.0%
2004	\$4,737,162,166	\$275,398,651	5.8%
2005	\$5,252,513,618	\$361,042,566	6.9%
2006	\$5,815,389,092	\$386,202,310	6.6%
2007	\$6,092,467,565	\$400,730,264	6.6%
2008	\$6,126,386,899	\$317,090,536	5.2%
2009	\$5,392,866,853	\$272,466,326	5.1%
2010	\$5,684,431,238	\$334,093,927	5.9%
2011	\$6,230,405,646	\$375,437,189	6.0%
2012	\$6,572,866,128	\$475,998,050	7.2%
<b>Average annual net income as % of total receipts (a)</b>			6.0%

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(a) Computed based on average net income percentage each year; sums of receipts and net income not used, in order to control for inflation over the time period.

Source: Internal Revenue Service, Returns of Active Corporations, Table 1; BAE, 2013.

### **Compliance Costs**

To meet the new requirements for the Sole Source of Heat exemption, households with older wood-burning heat systems will be required to upgrade to an-EPA-certified wood-burning device or to switch to a different heating fuel source. Air District staff estimate the purchase and installation cost of a new EPA-certified heater at between \$2,500 and \$6,000, with a basic heater cost of \$5,000.<sup>3</sup> This cost could be amortized over a number of years, through the use of a home improvement loan. While homeowners with sufficient equity would be able to use a home equity line of credit with a lower interest rate, BAE has assumed the use of a five-year loan at eight percent annual interest,

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<sup>3</sup> From BAAQMD Staff Report, "Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices - Proposed Amendments," henceforth referred to as the "Staff Report," August 10, 2015.

based on the cost and typical terms. For the loan for a \$5,000 heater, the annual costs for the term of the loan would be \$1,217 (see Table 4).

The heater replacement costs would be offset to some extent by reduced fuel costs due to the use of a more efficient heating system, especially for households using a fireplace; Air District staff has estimated the annual fuel cost savings for those replacing a wood stove at \$100, and \$300 for replacing a fireplace. As also shown in Table 4, the net annual costs would be \$917 for replacing an older wood stove, and \$1,117 for replacing a fireplace.

Based on Census data, Air District staff estimates that there are approximately 19,000 households in the Air District that use wood as their primary heating fuel, and staff estimates that half of these households will need to upgrade their heating system as a result of the new requirements of the sole source exemption, and further estimates that of these 9,500 households, one third use a fireplace and two-thirds use an uncertified wood stove. Taking the number of households in each category, and multiplying by the annual net cost estimate per household, total annual compliance costs are estimated at \$10.0 million.



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**Table 4: Compliance Costs Related to Rule Amendment for Sole Source Exemption**

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**Furnace Installation Costs**

Cost of furnace	\$5,000 (a)
Term for home improvement loan	5 (b)
Interest rate (annual)	8.00% (c)
Monthly payment	\$101 (d)
Annual cost of heater installation	\$1,217 (d)

**Fuel Cost Savings for Switch to EPA Qualified Device**

Switch from fireplace to EPA-certified device	\$300 (e)
Switch from uncertified wood stove to EPA-certified device	\$100 (e)

**Net Annual Costs per Household**

Switch from fireplace to EPA-certified device	\$917 (f)
Switch from uncertified wood stove to EPA-certified device	\$1,117 (f)

**Total Households Impacted**

Total number of households burning wood	19,000 (g)
Percent using an uncertified device	50% (g)
Total required to upgrade for the Sole Source Exemption	9,500 (h)
Percent using a fireplace	33.3% (i)
Percent using an uncertified stove	66.7% (i)
Total w fireplace required to upgrade	3,167 (j)
Total w uncertified stove required to upgrade	6,333 (j)

**Net Annual Compliance Costs for All Households**

Switch from fireplace to EPA-certified device	\$2,900,000 (k)
Switch from uncertified wood stove to EPA-certified device	\$7,100,000 (k)
<b>Total Compliance Costs</b>	<b>\$10,000,000</b>

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- (a) From BAAQMD Staff Report, "Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices - Proposed Amendments," henceforth referred to as the "Staff Report," August 10, 2015.
  - (b) Maximum term allowable for a loan of this size per <https://www.lightstream.com/home-improvement-loan#rates> or <https://www.suntrust.com/PersonalBanking/Loans/UnsecuredHomeImprovementLoans>.
  - (c) Best rate found for a home improvement loan at <https://www.lightstream.com/home-improvement-loan#rates> or <https://www.suntrust.com/PersonalBanking/Loans/UnsecuredHomeImprovementLoans>.
  - (d) Calculation based on terms above, assuming monthly payments.
  - (e) From the Staff Report.
  - (f) Cost of heat source upgrade less annual fuel savings costs.
  - (g) From the Staff Report.
  - (h) Total number of households times the percentage using an uncertified device.
  - (i) From the Staff Report, based on the assumed split by device type for renter households.
  - (j) Total number of household require to upgrade times percent currently using this device for heating.
  - (k) Costs per household times number of households.

Sources: BAAQMD; U.S. Census American Community Survey; other sources as noted; BAE, 2015.

IMPLAN is used to generate estimates of regional induced impacts resulting from changes in household income affecting revenues across the entire economy, and for the major industry sectors. These impacts are then be compared to total economic activity and activity by sector to assess the impacts of the return lost due to the implementation of the proposed amendments to Rule 6-3 on overall net income.

### ***Economic Impacts Analysis for Affected Industries***

In order to determine the impacts of these measures on business establishments covered by the proposed Rule amendments, the analysis that follows compares annualized compliance costs to annual profits. The analysis then calculates the compliance costs as a percentage of profits to determine the level of impact. BAAQMD uses the ARB's 10 percent threshold as a proxy for burden. Annualized compliance costs resulting in profit losses of 10 percent or more indicate that the proposed compliance measure has the potential for significant adverse economic impacts. For the analysis based on changes in household expenditures due to the Sole Source of Heat exemption requirement for heating system upgrades, there are far too many firms to reasonably assess impacts on a firm-by-firm basis.

### ***Revenue and Profits by Major Industry Sector***

Table 5 shows the estimated overall annual revenues and profits for the Bay Area by major industry group, based on IMPLAN estimates of overall revenues and IRS data on corporate profits. Overall, the Bay Area has a trillion-dollar economy, with the largest revenue generated by the manufacturing sector.

### ***Sectoral Impact on Profits***

As shown above in Table 4, the total estimated compliance costs for implementing the new Sole Source Exemption rule is \$10 million. These costs will be borne by households, and thus will reduce the income available to spend on other items. The analysis here conservatively assumes that this income is entirely lost to the Bay Area, even though this is not likely to be the case; for instance, the construction sector would likely benefit as contractors are hired to install new heating systems. Even as a complete reduction, however, the impacts are a "drop in the bucket" relative to the overall size of the Bay Area economy. This is reflected in the extremely low impacts on profits, as shown in Table 5. The estimated impacts of the assumed reduction in available household income as a share of total profits by major industry sector is insignificant across all sectors, with no sector showing a reduction in annual profits of even one-tenth of one percent. This loss of profit is far below the 10 percent ARB threshold. It should also be noted that this is a one-time non-recurring impact.

### ***Small Business Impacts***

These impacts are spread across the entire economy, such that impacts at small businesses are assumed at the same level.

**Table 5: Impacts of Reduced Household Income as Share of Profit by Major Industry Sector for the Bay Area**

Major Sector	Baseline Revenue/ Output	Impacts of Income Change	Estimated \$ Profit	Impacts as % of Profit
Agriculture, forestry, fishing, and hunting	\$3,409,458,088	\$16,438	\$143,860,875	0.011%
Mining	\$4,465,861,468	\$11,458	\$1,021,261,331	0.001%
Utilities	\$9,308,693,956	\$58,120	\$630,362,600	0.009%
Construction	\$45,377,021,811	\$91,288	\$2,074,732,097	0.004%
Manufacturing	\$274,080,382,579	\$521,304	\$18,651,330,940	0.003%
Wholesale trade	\$42,392,287,703	\$332,302	\$1,562,180,675	0.021%
Retail trade	\$38,869,824,168	\$554,102	\$805,154,545	0.069%
Transportation and warehousing	\$25,672,647,100	\$204,254	\$929,447,851	0.022%
Information	\$120,072,055,460	\$465,315	\$11,410,514,294	0.004%
Finance and insurance	\$57,036,661,420	\$670,480	\$13,385,839,475	0.005%
Real estate and rental and leasing	\$57,595,668,232	\$450,208	\$9,816,803,050	0.005%
Professional, scientific, and technical services	\$130,248,386,122	\$269,905	\$14,868,719,037	0.002%
Management of companies (holding companies)	\$20,861,104,908	\$94,209	\$9,276,574,358	0.001%
Administrative & support & waste management & remediation services	\$24,986,829,511	\$159,726	\$1,511,276,009	0.011%
Educational services	\$9,447,342,898	\$167,571	\$1,087,261,971	0.015%
Health care and social assistance	\$55,098,401,530	\$880,984	\$6,359,045,008	0.014%
Arts, entertainment, and recreation	\$9,172,473,638	\$135,017	\$829,795,195	0.016%
Accommodation and food services	\$26,308,712,576	\$365,923	\$959,293,641	0.038%
Other services	\$19,769,096,186	\$312,830	\$985,920,432	0.032%
<b>All Sectors</b>	<b>\$974,172,909,355</b>	<b>\$5,761,432</b>	<b>\$96,309,373,383</b>	<b>0.006%</b>

Sources: IMPLAN; Internal Revenue Service, Returns of Active Corporations, Table 1; BAAQMD; BAE, 2015.

## Impacts on Firewood Dealers

As noted previously, firewood dealers may see direct impacts on sales due to the replacement of older wood-burning heating systems (including fireplaces and non-EPA-certified wood stoves) with more efficient EPA-certified wood heating systems. The amendments to Rule 6-3 would require a number of households to upgrade their current wood-burning device to a newer unit, and thus there would be costs and economic impacts to the households affected. However, using the newer more efficient devices would lead to energy cost savings since they would require lower fuel consumption. As a result, firewood dealers may face lower sales and reduced revenues.

### *Economic Profile of Affected Industry*

Firewood dealers are part of the category defined in the North American Industry Classification System (NAICS) as “Fuel Dealers,” an industry comprising “establishments primarily engaged in retailing heating oil, liquefied petroleum (LP) gas, and other fuels via direct selling,” in NAICS category 454310. More specifically, the Economic Census provides some data specifically for “Other Fuel Dealers,” which are “establishments primarily engaged in retailing fuels, such as coal, wood, or other fuels (except liquefied petroleum gas and heating oil) via direct selling.”

There are a very small number of establishments in the Other Fuel Dealers category. According to the 2012 Economic Census, there were only 22 establishments in this category in all of California,

and only eight in the San Jose-San Francisco-Oakland Combined Statistical Area (CSA), which encompasses the Air District's region.<sup>4</sup> Based on the data available, the dealers in the state employed only 79 workers, and the CSA's dealers employed a total of between 20 and 79 employees.

**Table 6: Profile of Other Fuel Dealers Industry**

<u>Area</u>	<u>Number of Establishments</u>	<u>2012 Revenues</u>	<u>Number of Employees</u>	<u>Annual Payroll</u>
San Jose-San Francisco-Oakland, CA CSA (a)	8	(b)	(c)	(b)
California	22	\$8,030,000	79	\$1,516,000
United States	156	\$108,702,000	495	\$12,711,000

Note: "Other Fuel Dealers" includes establishments primarily engaged in retailing fuels, such as coal, wood, or other fuels (except liquefied petroleum gas and heating oil) via direct selling. Includes only establishments with payroll.

(a) This Combined Statistical Area (CSA) is the smallest area for which data were available that covered the entire BAAQMD region. CSA includes the nine-county ABAG region plus San Joaquin, Santa Cruz, and San Benito Counties.

(b) Data withheld to avoid disclosing data for individual companies.

(c) 20-99 employees; more detailed data withheld to avoid disclosing data for individual companies.

Source: 2012 Economic Census.

BAAQMD also queried Dun & Bradstreet data and obtained the following list of firewood dealers in the Bay Area (see Table 7). This query shows 17 dealers, with 71 employees and annual revenues estimated at approximately \$7.9 million. While this information varies somewhat from the Economic Census for a variety of reasons related to the source,<sup>5</sup> it confirms that there are a limited number of firewood dealers in the Bay Area, and that they have limited employment.

<sup>4</sup> See footnote in table defining the Combined Statistical Area. This was the smallest area for which data were available.

<sup>5</sup> For example, the Duns data may include businesses with no paid employees, even though DUNS reports employees at each site. Also, the Economic Census data is from a different time frame, and the DUNS data cannot be confirmed via administrative records that the Census Bureau may have access to.

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**Table 7: Firewood Dealers in the Bay Area**

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<b>Business Name</b>	<b>City</b>	<b>Number of Employees</b>	<b>Sales Volume</b>
Fessenden Firewood	Berkeley	5	\$550,000
Bahara's Firewood	Sunnyvale	5	\$430,000
Xinar.com	Sebastopol	2	\$600,000
The Coldest Winter	San Francisco	1	\$66,000
Lost Coast Forest Products, Inc.	Santa Rosa	12	\$1,900,000
Kosich Firewood	Danville	3	\$160,000
Alaimo's Wood Farm	Pittsburg	1	\$140,000
Hurst Firewood	Napa	1	\$120,000
Valley Firewood	Novato	3	\$230,000
Summit Tree & Firewood Company	Petaluma	2	\$150,000
Oconnell Ranches-apple & Firewood Prdct	Sebastopol	4	\$310,000
Nero's Designer Firewood	Novato	15	\$1,000,000
All Seasons Firewood Llc	Santa Rosa	6	\$510,000
Firewood Farms	Half Moon Bay	1	\$50,000
Northwinds Firewood Tree Service	Belmont	2	\$150,000
Fessenden Firewood	Richmond	5	\$540,000
Hurst Firewood	Vallejo	3	\$980,000
<b>Total</b>		<b>71</b>	<b>\$7,886,000</b>

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Sources: Dun & Bradstreet; MTC; BAAQMD, 2015.

While the other fuel dealers are not the only source for firewood, it is unlikely that decreased sales of firewood products at other retail outlets (e.g., supermarkets or hardware stores) would be substantial enough to impact business adversely. The 2012 Economic Census data indicate that they do not account for a substantial portion of sales for other types of retailers. As shown in the table below, firewood sales make up less than one percent of sales at gasoline stations that carry the product; for fuel dealers selling firewood, 22 percent of revenues come from sales of firewood.

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**Table 8: Major Sellers of Wood for Fuel, United States**

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<b>Type of Retailer (a)</b>	<b>Number of Establishments</b>	<b>Revenues from All Sales (b)</b>	<b>Revenues from Sales of Firewood</b>	<b>As Percent of Total Sales</b>
<b>Gasoline Stations (c)</b>	1,481	\$7,134,752,000	\$12,168,000	0.2%
<b>Fuel Dealers (d)</b>	136	\$224,131,000	\$49,373,000	22.0%

---

(a) Includes retailers where wood sales are listed as a separate product line. Does not include all retailers selling wood for fuel.

(b) Total sales of establishments reporting sales of wood for fuel.

(c) Includes gasoline stations with convenience stores.

(d) Includes all retail fuel dealers, not just Other Fuel Dealers.

Source: 2012 Economic Census, Preliminary Product Line Sales.

### **Estimated Rate of Return**

Firewood dealers are part of the larger category of nonstore retailers (NAICS 454), which is the most specific category available in the IRS data on net income. For this analysis, 10-year averages were used as a benchmark such that the impacts of any particular year's performance due to economic fluctuations are lessened. As shown in Table 9, the 10-year average net income as a percent of total receipts for nonstore retailers is 5.9 percent.

**Table 9: Returns on Total Receipts for Nonstore Retailers, 2003-2012, for Active Corporations**

<b>Nonstore Retailers (NAICS 454)</b>	<b>Total Receipts 2003-2012 (in \$000)</b>	<b>Net Income 2003-2012 (in \$000)</b>	<b>Net Income as % of Total Receipts</b>
2003	\$42,187,687	\$2,010,771	4.8%
2004	\$45,845,008	\$1,588,577	3.5%
2005	\$44,535,355	\$3,459,395	7.8%
2006	\$44,095,173	\$3,177,093	7.2%
2007	\$56,400,579	\$3,281,813	5.8%
2008	\$56,355,294	\$2,628,645	4.7%
2009	\$49,189,594	\$2,227,209	4.5%
2010	\$56,990,292	\$4,135,871	7.3%
2011	\$58,733,455	\$3,161,725	5.4%
2012	\$62,054,401	\$5,149,527	8.3%
<b>Average annual net income as % of total receipts (a)</b>			<b>5.9%</b>

(a) Computed based on average net income percentage each year; sums of receipts and net income not used, in order to control for inflation over the time period.

Source: Internal Revenue Service, Returns of Active Corporations, Table 1; BAE, 2013.

### **Compliance Costs**

Firewood dealers have very limited costs related to compliance with the amended Rule; the only costs might relate to labelling wood as seasoned/non-seasoned, but these costs should be minimal and are not considered here. The significant losses are related to decreased business, not compliance costs. Table 10 provides an estimate of the decline in revenues for firewood dealers. It is assumed that the losses will be sustained by these businesses; households heating with wood as their primary fuel are unlikely to be purchasing the kinds of small packages typically available at gasoline stations and other retailers such as supermarkets.

The savings in fuel costs for households is in turn a loss of revenue for firewood dealers. Based on the same assumptions as used in the analysis of impacts on households, the annual loss in revenue for firewood dealers in the Bay Area is estimate at approximately \$1.6 million.

---

**Table 10: Compliance Cost for Firewood Dealers**

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<b>Annual Per HH Fuel Cost Savings for Switch to EPA Qualified Device</b>	
Switch from fireplace to EPA-certified device	\$300 (a)
Switch from uncertified wood stove to EPA-certified device	\$100 (a)
<b>Total Households Impacted</b>	
Total number of households burning wood	19,000 (b)
Percent using an uncertified device	50% (b)
Total required to upgrade for the Sole Source Exemption	9,500 (c)
Percent using a fireplace	33.3% (d)
Percent using an uncertified stove	66.7% (d)
Total w fireplace required to upgrade	3,167 (e)
Total w uncertified stove required to upgrade	6,333 (e)
<b>Net Annual Savings for All Households</b>	
Switch from fireplace to EPA-certified device	\$950,000 (f)
Switch from uncertified wood stove to EPA-certified device	<u>\$630,000</u> (f)
<b>Total Net Annual Savings</b>	<b>\$1,580,000</b>
<b>Change in Gross Revenue for Firewood Dealers</b>	<b>(\$1,580,000)</b>
<b>Estimated Existing Revenues</b>	<b>\$7,886,000</b> (g)
<b>Change in Income for Firewood Dealers</b>	<b>-20%</b>

---

(a) From BAAQMD Staff Report, "Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices - Proposed Amendments," henceforth referred to as the "Staff Report," August 10, 2015.

(b) From the Staff Report. Assumes 100% of rental units require upgrade.

(c) Total number of households times the percentage using an uncertified device.

(d) From the Staff Report, based on the assumed split by device type for renter households.

(e) Total number of household require to upgrade times percent currently using this device for heating.

(f) Savings per household times number of households.

(g) From Dun & Bradstreet.

Sources: Dun & Bradstreet; MTC; BAAQMD; U.S. Census American Community Survey; other sources as noted; BAE, 2015.

***Economic Impacts Analysis for Affected Industry***

In order to determine the impacts of these measures on firewood dealers affected by the proposed Rule amendments, the analysis that follows considers lost revenues relative to estimated net income for these dealers.

As noted above in Table 10, the implementation of the Sole Source Exemption rule will lead to increased heating efficiency, which translates into decreased firewood costs for households, which in turn would lead to decreased revenues for firewood dealers. This decline is estimated at approximately \$1.6 million annually, or 20 percent of revenues. Assuming that firewood dealer expenses are directly proportional to revenues, net income and profits would decline by the same percentage. The assumption of direct proportionality is conservative in estimating impacts; while some costs (obtaining the firewood at wholesale or otherwise, and staffing levels to some degree) will decrease with lower sales, other costs, such as rent or property taxes, are fixed such that operating expenses would actually not decline proportionally, and net income would decrease more

than gross revenues on a proportional basis. Thus an assumed decline of 20 percent in net income is a conservative estimate, and this conservative estimate of loss is greater than the ARB 10 percent threshold used by BAAQMD as a proxy for burden, so a 20 percent or greater loss indicates that the proposed costs related to compliance have the potential for significant adverse economic impacts.

Once the lost revenues are estimated, IMPLAN has been used to assess any indirect and induced impacts from these lost revenues. Given the likely small size of this lost revenue relative to the overall economy, these impacts are not substantial. As shown in Table 11, the overall economic loss amounts to less than six jobs, and less than \$1 million in output.<sup>6</sup> Over half of the impacts are direct impacts for the firewood dealers.

---

**Table 11: Overall Impacts of Reduction in Firewood Sales on the Bay Area Economy**

---

<u>Impact Type</u>	<u>Employment</u>	<u>Output</u>
Direct Effect	3.6	\$597,240
Indirect Effect	0.9	\$190,757
Induced Effect	1.2	\$200,824
Total Effect	5.8	\$988,821

---

Sources: IMPLAN; Dun & Bradstreet; MTC; BAAQMD; BAE, 2015.

### ***Small Business Impacts***

According to California Government Code 14835, a small business is any business that meets the following requirements:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;
- Must have its principal office located in California;
- Must have its owners (or officers in the case of a corporation) domiciled in California; and
- Together with its affiliates, be either:
  - A business with 100 or fewer employees, and an average annual gross receipts of \$10 million or less over the previous three tax years, or
  - A manufacturer with 100 or fewer employees.

Assuming these establishments are independently owned, they would all meet the criteria of California Government Code 14835 for categorization as small businesses, based on having 100 or fewer employees and annual revenues of less than \$10 million, because even as a group they have fewer employees and less revenue than these thresholds. As discussed above, based on impacts on profits, there is the potential for significant impacts for any of these businesses meeting the

---

<sup>6</sup> The losses shown here are less than the lost sales, as IMPLAN calculates impacts based on producer prices rather than retail prices.



definition of a small business. However, overall it should be noted that this is a very limited number of businesses with few employees and limited revenues.

## **Impacts on Rental Property Owners**

As a result of the amendments to Rule 6-3, rental property owners with units heated using wood as a fuel will be required to switch to natural gas or another non-solid fuel heat source.

### ***Economic Profile of Affected Industry***

The number of affected properties is assumed to be extremely low, since most rental properties in areas with natural gas service already do not use wood as a heat source. The Air District estimates that approximately 250 properties would be affected by the rule change mandating a conversion away from wood heaters in rental units located in areas with natural gas availability.

The business of renting these properties falls in NAICS 53110, Lessors of Residential Buildings and Dwellings. This sector has a high proportion of nonemployer businesses, likely due to a large number of small landlord sole proprietors and partnerships that own a limited number of buildings and handle the business themselves, or through independent contractors (e.g., a separate property management firm). Overall as of 2012, the ABAG nine-county region has a total of 22,478 establishments engaged in this line of business, of which 20,284 have no employees (see Table 12). Even if each of the estimated 250 impacted units in the Air District is operated by a separate entity, this still only constitutes approximately 1.3 percent of the establishments.

Among the establishments with employees, there are a total of approximately 10,000 workers who are directly employed. The nonemployers tend to have much lower revenues per establishment, another indicator that they tend to control fewer rental units than the employers. Overall, the establishments in the ABAG Region reported gross revenues of approximately \$7.8 billion in 2012.

---

**Table 12: Profile of Lessors of Residential Buildings and Dwellings, 2012**

---

<u>Area</u>	<u>Establishments with Employees</u>			
	<u>Number of Establishments</u>	<u>2012 Revenues (\$000)</u>	<u>Number of Employees</u>	<u>Annual Payroll (\$000)</u>
ABAG Region	2,194	\$3,400,343	9,976	\$372,924
California	9,101	\$14,302,841	41,843	\$1,474,922
United States	65,108	\$80,671,161	305,641	\$9,716,605

	<u>Nonemployer Establishments</u>			
	<u>Number of Establishments</u>	<u>2012 Revenues (\$000)</u>	<u>Number of Employees</u>	<u>Annual Payroll (\$000)</u>
ABAG Region	20,284	\$4,367,014	n.a.	n.a.
California	98,856	\$20,599,453	n.a.	n.a.
United States	1,057,754	\$143,842,054	n.a.	n.a.

	<u>All Establishments</u>	
	<u>Number of Establishments</u>	<u>2012 Revenues (\$000)</u>
ABAG Region	22,478	\$7,767,357
California	107,957	\$34,902,294
United States	1,122,862	\$224,513,215

---

Note: All dollar amounts in thousands of dollars.

Source: 2012 Economic Census; 2012 Nonemployer Statistics for the US, States, Metropolitan Areas, and Counties.

### ***Estimated Rate of Return***

Lessors of residential properties are part of the larger Real Estate industry (NAICS 531), which is the most specific category available in the IRS data on net income. Once again, the analysis used 10-year averages as a benchmark for performance. As shown in Table 13, the 10-year average net income as a percent of total receipts for the real estate industry is 20.6 percent.

---

**Table 13: Returns on Total Receipts for Real Estate, 2003-2012, for Active Corporations**

---

<b>Nonstore Retailers (NAICS 454)</b>	<b>Total Receipts 2003-2012 (in \$000)</b>	<b>Net Income 2003-2012 (in \$000)</b>	<b>Net Income as % of Total Receipts</b>
2003	\$69,885,998	\$15,277,639	21.9%
2004	\$82,641,953	\$18,528,154	22.4%
2005	\$104,148,261	\$25,281,219	24.3%
2006	\$101,261,630	\$22,908,353	22.6%
2007	\$86,593,476	\$18,253,630	21.1%
2008	\$68,519,534	\$8,671,787	12.7%
2009	\$63,735,255	\$8,126,277	12.8%
2010	\$62,402,424	\$11,512,465	18.4%
2011	\$64,228,970	\$15,389,887	24.0%
2012	\$74,143,139	\$18,899,153	25.5%
<b>Average annual net income as % of total receipts (a)</b>			<b>20.6%</b>

---

(a) Computed based on average net income percentage each year; sums of receipts and net income not used, in order to control for inflation over the time period.

Source: Internal Revenue Service, Returns of Active Corporations, Table 1; BAE, 2013.

### **Compliance Costs**

To meet the new requirements that rental properties heating with wood in areas with natural gas availability switch over to a non-solid fuel source (most likely gas), landlords will be required to install gas furnaces or other new heating systems that do not rely on wood for fuel. Air District staff estimate the purchase and installation cost of a new gas heater at between \$2,500 and \$6,000, with a basic heater cost of \$5,000.<sup>7</sup> This cost is assumed to be amortized over the lifetime of the heating system. For a \$5,000 heater, the annual amortization is assumed to be \$539 (see Table 14).

The heater replacement costs would be offset by reduced fuel costs due to the use of a more efficient heating system, but the analysis here conservatively assumes that tenants are responsible for fuel costs, so those savings would accrue to the tenants.

Air District staff estimates that there are approximately 250 rental units in the Air District that use wood as their primary heating fuel but have natural gas available at the property, and staff assumes that all of these housing units will need to upgrade their heating system as a result of the new requirements. For these 250 units, the assumed annual compliance costs total approximately \$135,000.

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<sup>7</sup> From BAAQMD Staff Report, "Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices - Proposed Amendments," August 10, 2015.

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**Table 14: Compliance Costs Related to Rule Amendment for Renter-Occupied Units**

---

**Revenues and Operating Expenses**

Monthly Rental Rate	\$2,500 (a)
Vacancy Rate	5% (c)

**Projected Annual Income**

Residential	
Gross Scheduled Rents	\$30,000
Less Vacancy	(\$1,500)
<b>Gross Annual Revenues</b>	<b>\$28,500</b>

Net Income as Percent of Revenues (per IRS)	20.6% (c)
---	-----------

<b>Net Annual Income</b>	<b>\$5,859</b>
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**Furnace Installation Costs**

Cost of Furnace	\$5,000 (d)
Lifetime of Furnace (Years)	15 (e)
Interest Rate(Annual)	7.0% (f)

Monthly Payment	\$44.94
-----------------	---------

<b>Amortized Annual Cost of Heater Installation</b>	<b>\$539</b>
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<b>Heater Cost as % of Annual NOI</b>	<b>9.2%</b>
---------------------------------------	-------------

**Total Households Impacted**

Total number of households burning wood	250 (g)
Percent using an uncertified device	100.0%
<b>Total rental units required to upgrade</b>	<b>250</b>

<b>Total Annual Compliance Cost for Landlords</b>	<b>\$135,000</b>
---	------------------

---

(a) Estimate of typical rent by BAE; since many of these properties are likely to be single family houses, this estimate is deemed conservative. Assumes renters pay fuel cost so no fuel cost savings accrue to property owner.

(b) Industry standard assumed for stabilized vacancy rate.

(c) Internal Revenue Service, Returns of Active Corporations, Table 1.

(d) From BAAQMD Staff Report, "Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood Burning Devices - Proposed Amendments," henceforth referred to as the "Staff Report," August 10, 2015.

(e) Lower end of estimate for typical heating system lifetime, from BAE Internet research.

(f) Per BAAQMD amortization assumption.

(g) From Staff Report.

Sources: BAAQMD; IRS; BAE, 2015.

### ***Economic Impacts Analysis for Affected Industry***

Table 14 above also shows the assumed impacts on profits. Based on the assumptions here, a typical property owner would see a reduction of approximately 9.2 percent in net income, below the ARB 10 percent threshold deemed significant. It should be noted that many of the assumptions regarding rents and tenant responsibility for fuel costs, are conservative; for example if utility savings go to the tenant, the property owners may be able to increase contract rents to pass through the costs of installing the new heating system, or if the property owner is responsible for heating fuel costs, the savings through switching from wood to gas would go to the landlord, reducing the compliance costs.

Based on an IMPLAN analysis the indirect and induced impacts from these compliance costs are trivial, amount to less than one job and only \$43,500 annually in indirect and induced output in the entire Bay Area economy.

---

**Table 15: Overall Impacts of Compliance Costs on Residential Rental Property Owners in the Bay Area**

---

<u>Impact Type</u>	<u>Employment</u>	<u>Output</u>
Direct Effect	0.7	\$135,000
Indirect Effect	0.2	\$24,976
Induced Effect	0.1	\$18,517
Total Effect	0.9	\$178,493

---

Sources: IMPLAN; BAAQMD; BAE, 2015.

### ***Small Business Impacts***

While no information was gathered on how many of the affected properties were owned by small businesses, the data presented above in Table 12 indicate that many property owners have no employees at all, and small residential properties are often owned by individuals or small investor partnerships. In some cases, residences are rented by former owner-occupants who continue to hold the property. In the most extreme scenario, all 250 of these properties would be owned by small businesses as defined above according to California Government Code 14835.

However, the analysis indicates that the impacts of the proposed rule amendment requiring the replacement of wood heating sources would not see a drop in profits that would reach significant levels for a typical landlord, in an analysis that is conservative and also does not account for potential long-term capital gains.

**Initial Study/Negative Declaration for the  
Bay Area Air Quality Management District  
Regulation 6, Rule 3: Wood Burning Devices**

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## **CHAPTER 1**

### **Introduction**

#### **1.1 PURPOSE OF THIS DOCUMENT**

This Negative Declaration assesses the environmental impacts of the proposed amendments to Regulation 6, Rule 3: Wood Burning Devices (Rule 6-3), by the Bay Area Air Quality Management District (BAAQMD or District). This assessment is required by the California Environmental Quality Act (CEQA) and in compliance with the state CEQA Guidelines (Title 14 California Code of Regulations §15000 et seq.). A Negative Declaration serves as an informational document to be used in the decision-making process for a public agency that intends to carry out a project; it does not recommend approval or denial of the project analyzed in the document. The BAAQMD is the lead agency under CEQA and must consider the impacts of the proposed amendments when determining whether to adopt them. The BAAQMD has prepared this Negative Declaration because no significant adverse impacts are expected to result from the proposed amendments to Regulations 6-3.

#### **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, 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 BAAQMD). Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource.
- An impact is considered *less than significant with mitigation incorporated* if the analysis concludes that an impact on a particular resource topic would be significant (i.e., would exceed certain criteria or guidelines established by BAAQMD), but would be reduced to a less than significant level through the implementation of mitigation measures.

### 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 of Regulation 6, Rules 3, describes the proposed rule amendments, and describes the area and facilities that would be affected by the amendments.
- Chapter 3, “Environmental Checklist,” presents the checklist responses for each resource topic. This chapter includes a brief setting description for each resource area and identifies the impact of the proposed rule amendments on the resources topics listed in the checklist.
- Chapter 4, “References Cited,” identifies all printed references and personal communications cited in this report.

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## CHAPTER 2

### Description of the Proposed Rule

#### 2.1 BACKGROUND

Rule 6-3 is different than other Air District rules that regulate sources of air pollution. Unlike other rules which require industry compliance, this rule requires the cooperation and participation of Bay Area residents. While burning wood may be a wintertime tradition and/or source of heat for some, wood smoke generates fine particulates. The Air District continues to develop smoke reduction strategies to further reduce particulate matter less than 2.5 microns equivalent aerodynamic diameter (PM<sub>2.5</sub>). The proposed amendments to Rule 6-3 would further reduce emissions of PM<sub>2.5</sub> and visible emissions from wood burning devices in the Bay Area.

##### 2.1.1 HEALTH HAZARDS OF PM<sub>2.5</sub>

The nine counties surrounding San Francisco Bay total nearly seven million residents and an estimated 1.4 million fireplaces and woodstoves. The fine particulates in wood smoke emitted from these fireplaces and woodstoves comprise the number one source of PM<sub>2.5</sub> emissions in the wintertime and raise health concerns for Bay Area residents.

Combustion processes, including the combustion of wood in wood-burning devices, are a major source of anthropogenic air pollution. Smoke from residential wood-burning devices contains PM<sub>2.5</sub>, along with other pollutants including carbon monoxide, volatile organic compounds (VOCs), black carbon, and air toxics such as benzene. Wood-burning devices are used around the clock in some areas and can increase PM<sub>2.5</sub> pollution to levels that pose serious health concerns. In some areas, residential wood smoke constitutes a significant portion of the PM<sub>2.5</sub> emissions in those areas.

Fine particles contain microscopic solids or liquid droplets. Numerous scientific studies have linked PM<sub>2.5</sub> exposure to a variety of health problems, including premature death in people with heart or lung disease, non-fatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing or difficulty breathing. However, even healthy people may experience temporary symptoms from exposure to elevated levels of particulates. People with respiratory illnesses, children, and the elderly, are more sensitive to the effects of PM<sub>2.5</sub>.

### **2.1.2 WINTERTIME METEOROLOGY AND PM LEVELS**

Geographical distribution of wood-burning sources, local meteorology, and air exchange with neighboring air basins, all influence PM<sub>2.5</sub> concentrations in the Bay Area. The Bay Area normally experiences the highest PM<sub>2.5</sub> levels in the winter months from November through February when less frequent horizontal mixing (i.e., surface winds) and vertical mixing occurs. Horizontal and vertical mixing is critical to dispersing particulates in the atmosphere and keeping ambient concentrations below the PM<sub>2.5</sub> standards. Winter meteorological conditions with periods of atmospheric stagnation can cause PM<sub>2.5</sub> levels to exceed federal and State standards in areas within the BAAQMD jurisdiction.

BAAQMD analyses show that meteorological wind patterns can transport particulates from one location to another within the air basin, resulting in increased PM<sub>2.5</sub> concentrations in some parts of the Bay Area. For example, a ridge of high pressure settling over northern California for multiple days can cause overnight temperature inversions to form, trapping particulates near the surface. Over a period of several days, these pollutants can accumulate, resulting in elevated PM<sub>2.5</sub> levels. As high pressure continues to build, easterly winds can also develop, transporting wood smoke from adjacent air basins and eastern areas into other areas within the Air District..

### **2.1.3 SOURCE DESCRIPTION – WOOD BURNING DEVICES**

Emissions from wood-burning devices can vary depending on a variety of factors, including the design and age of the wood-burning device, the type and amount of fuel used, and the ability of the user to operate the device in accordance with manufacturer's specifications and guidelines. Rule 6-3 defines wood-burning devices as any fireplace, wood heater such as a wood or pellet stove, fireplace insert, or any indoor permanently installed device burning any solid fuel for space-heating or aesthetic purposes. There are a variety of wood burning devices that are either existing in homes or available for purchase by the consumer to include wood stoves, pellet stoves, fireplace inserts and fireplaces. Generally, fireplaces of brick or stone, or "low mass" fireplaces, primarily provide ambiance and secondarily supply heating. In the process of burning wood or a solid-fuel product, such as manufactured logs, pressed logs or wood pellets, these devices must vent gases and combustion by-products through a flue or chimney. Devices that are sold in the Bay Area are required to be United States Environmental Protection Agency (U.S. EPA) certified to meet lower emissions ratings and are tested by an accredited laboratory.

### **2.1.4 U.S. EPA CERTIFIED WOOD HEATER REQUIREMENTS**

#### **2.1.4.1 Emission Requirements**

Residential wood heaters contribute significantly to particulate air pollution. The U.S. EPA has regulated wood heater particulate emissions since 1988. Most wood-burning stoves sold in the United States at that time had to be certified by the U.S. EPA in



accordance with Title 40 Code of Federal Regulations Part 60, Subpart AAA (Standards of Performance for New Residential Wood Heaters). U.S. EPA continually strengthened the emission standards for wood heaters over the years and the Air District adopted Title 40 Code of Federal Regulations, Part 60, Subpart AAA requirements in the adoption of Rule 6-3 in 2008. Wood heaters that met certification requirements and verified by U.S. EPA to meet an emissions limit of 4.1 grams per hour (g/hr) of particulate matter (PM) for units equipped with a catalytic combustor, and 7.5 g/hr for units without a catalytic combustor units, were designated as “U.S. EPA Phase II Certified.” Rule 6-3 currently only allows wood heaters that are U.S. EPA Phase II Certified Devices to be sold in the Bay Area.

On February 3, 2015, U.S. EPA updated emission requirements for residential wood heaters to further strengthen the standard that would incorporate new heater technology to make heaters emit less PM<sub>2.5</sub>. The updated requirements further lower emission limits for certified wood heaters and sets emission limits for a broader range of wood or pellet burning heaters, stoves, and other residential heaters which were previously unregulated, including outdoor and indoor wood-fired boilers (also known as hydronic heaters), indoor wood-fired forced air furnaces, and single burn-rate woodstoves. For the purposes of amending Rule 6-3, only wood and pellet burning stoves or inserts will be included as other heaters are not widely used in California and the greater Bay Area.

The U.S. EPA’s updated requirements in Title 40 Code of Federal Regulations, Part 60, Subpart AAA will phase in new emission limits over a five-year period, beginning 2015. The standards apply only to new wood heaters manufactured and sold and will not affect wood heaters already being used in homes.

#### **2.1.4.2 Labeling Requirements**

The U.S. EPA's certification process requires manufacturers to verify that each of their wood heater model lines meet a specific particulate emission limit by undergoing emission testing at a U.S. EPA accredited laboratory.

A U.S. EPA certified wood stove can be identified by a temporary paper label attached to the front of the wood stove and a permanent metal label affixed to the back or side of the wood stove. One purpose of certification is to verify and document, in accordance with standardized testing by an independent body that the wood-burning device is designed such that the PM emissions to the atmosphere are less than the applicable emission limits for the specific device type.

## **2.2 OBJECTIVES**

The objective of the proposed amendments to Regulation 6, Rule 3: Wood-burning Devices is to further reduce emissions of PM<sub>2.5</sub> and visible emissions from wood burning devices used as a source of primary heat, supplemental heat, or ambiance in the Bay Area.

The Bay Area and neighboring regions are not in attainment of State and federal particulate matter standards and further reductions in PM emissions are needed. PM emission reductions can be achieved by abatement from point sources, fugitive capture enhancement, and pollution prevention practices.

The U.S. EPA has set primary national ambient air quality standards for air pollutants to define the levels considered safe for human health. The California Air Resources Board (CARB) has also set California ambient air quality standards. The Bay Area is a non-attainment area for particulate matter of 10 microns or less (PM10) or for particulate matter of 2.5 microns or less (PM2.5). Under State law, non-attainment areas must prepare plans showing how they will attain the state standards. The BAAQMD has prepared, approved and is currently implementing, the 2010 Clean Air Plan (CAP) which provides a plan to show how the district will meet applicable air quality standards. The 2010 CAP included FSM-12, which included emission reductions of PM from wood smoke.

## **2.3 PROPOSED RULE AMENDMENTS**

Since the adoption of Rule 6-3 in 2008, the Air District has recognized there are parts of the Rule that can benefit from changes or additional clarification to ensure interpretation and enforcement are consistent with the intent of the rule to further reduce PM2.5 emissions regionally and locally. In March and April 2015, the Air District hosted nine public workshops to discuss proposed amendments to the rule.

This section summarizes the Air District's revised proposal following nine workshops at which the public provided input and ideas on the rule. The proposed amendments incorporate changes from public comments received during workshop as well as comments from interested parties and stakeholders.

### **2.3.1 SOLE SOURCE OF HEAT EXEMPTION**

In Rule 6-3, a wood-burning device may be used during a Winter Spare the Air (WSTA) Alert if that wood-burning device is the only source of permanently installed heat. Following rule adoption in 2008, and through its policy, the Air District clarified that a dwelling with a permanently installed propane heater does not qualify for this exemption.

The Air District proposes to amend the Sole Source of Heat exemption to strengthen and clarify the conditions for qualification. The proposed amendment would require that residences must have a U.S. EPA-certified wood-burning device as the only permanently installed source of heat to qualify for this exemption. Additionally, a claimant would be required to register that U.S. EPA-certified device with the Air District to receive this exemption. The Air District's new proposed registration program requirement is discussed later in this section.

This proposal ensures that devices used as sole sources of heat are cleaner and more efficient than those previously exempt from the rule. Wood stoves tend to last a long time and are

replaced less frequently than other major appliances, so many older, uncertified wood-burning devices are still used regularly for heating.

### **2.3.2 EXEMPTION FOR NON-FUNCTIONAL, PERMANENTLY INSTALLED HEATERS**

Rule 6-3 currently does not provide an exemption for non-functional heaters and does not address concerns where a wood-burning device may be the only source of heat available until the primary heater is repaired. The Air District proposes a temporary 30-day exemption to allow use of a wood-burning device during a WSTA Alert while a repair is being made to resume function of a non-wood heater. This exemption will only apply if a household has no alternate form of heat available, such as gas or electric heating. The proposed amendment would require claimants to submit repair documentation for verification upon request by the Air District within ten days.

### **2.3.3 EXEMPTION FOR LOSS OF NATURAL GAS AND/OR ELECTRIC POWER**

The current Rule 6-3 has two separate exemptions for temporary gas or electric service outages. These exemptions allow use of a wood-burning device during a WSTA Alert if there is a loss of natural gas and/or electric power due to natural disasters, such as, but not limited to, earthquakes, fires, floods, storms, or if an outage is due to utility service disruptions. The Air District is proposing to combine these two exemptions sections into one and require that service outages must be verifiable by the local utility service provider.

### **2.3.4 CLARIFY, AMEND, OR ADD DEFINITIONS TO RULE**

The current rule has two separate exemptions which allows any person who experiences a temporary service outage, where natural gas service and/or electric service is disrupted, may qualify for an exemption if that service outage is verifiable by the local utility service provider. The District proposes to maintain this exemption without change of conditions; however, the District is proposing to amend this into one exemption to provide clarity.

### **2.3.5 U.S. EPA REQUIREMENT FOR RESIDENTIAL WOOD HEATERS**

Since adoption of Rule 6-3 in 2008, the Air District has enforced U.S. EPA requirements for residential wood heaters such that all wood heaters sold in the Air District must be “EPA Phase II Certified” in accordance with Title 40, Code of Federal Regulations, Part 60, Subpart AAA.

On February 3, 2015, the U.S. EPA updated emission standards for new residential wood heaters and the Air District is proposing to require wood-burning devices to meet these new certification requirements. U.S. EPA’s new emission standards and five-year compliance schedule for new heaters establishes health-protective measures that ensure

manufacturers continue to move toward cleaner technologies and consumers transition to cleaner heater options.

Newly manufactured wood heaters must comply with the emissions standards and specified test methods in Title 40, Code of Federal Regulations, Part 60, Subpart AAA, as summarized in Table 2-1. Wood heaters currently in use and in homes are not affected by these new emission standards and the standards do not require a replacement or upgrade of existing devices. They also do not apply to outdoor fireplaces, pizza ovens, fire pits, barbecues, or chimineas.

**TABLE 2-1**

**Title 40 CFR Part 60, Subpart AAA;  
Requirements for Wood Heater Manufacturers and Retailers**

<b>Compliance Date</b>	<b>Emissions Ratings</b>
May 15, 2015	4.5 g/hr
May 15, 2020	2.5 g/hr (crib tested)
	2.0 g/hr (cordwood tested)

Note: Effective December 1, 2015, devices that have an emission rating of greater than 4.5 g/hr can no longer be sold, purchased or installed.

**2.3.6 REQUIREMENT FOR SALE, RESALE, TRANSFER OR INSTALLATION OF WOOD-BURNING DEVICES**

The current rule prevents the sale, resale, supply, transfer, or installation of U.S. EPA non-certified wood-burning devices within the Bay Area. The purpose of this requirement is to ensure that no member of the general public sells or purchases wood-burning devices that are not U.S. EPA certified. This provision is intended to remove loopholes that allow non-compliant stoves to stay on the market and be sold by the general public. This requirement applies to both used and new devices; however, the requirement does not apply to a wood-burning device that is an existing installed fixture included in the sale or transfer or real property.

**2.3.7 VISIBLE EMISSIONS LIMITATION**

The visible emissions limitation in the current Rule 6-3 uses the Ringelmann Smoke Chart to measure the apparent density of smoke. The Ringelmann No. 1 limit used in Rule 6-3 is a visible emission standard equivalent to 20 percent opacity. Visible emissions that exceed 20 percent opacity from chimneys, stovepipes, or flues based on visual observation for at least six consecutive minutes in any one-hour period are not allowed under proposed Rule 6-3. This requirement does not apply to the startup of a new fire for 20 minutes in any four-hour period.

The Air District proposes to amend and strengthen the standard to be consistent with Regulation 6, Rule 1, General Requirements, for sources of particulate matter. The

proposed amendment would not change the 20 percent opacity limit; however, it would shorten the duration of excessive visible emissions to three minutes in any hour. Following a 20-minute start-up allowance for new fires, visible emissions of greater than 20 percent opacity and aggregate to three minutes in any hour would be prohibited. This requirement does not apply to the startup of a new fire for 20 minutes in any four-hour period. The proposed amendment would make it easier for Air District staff to determine which wood-burning devices are not operating properly and creating excessive smoke.

### **2.3.8 REAL ESTATE AND RENTAL DISCLOSURE REQUIREMENT**

The purpose of Rule 6-3 is to limit emissions of PM and visible emissions from wood-burning devices to protect air quality and public health. The Air District is proposing an informative measure that would require disclosure when selling, leasing, or renting properties with wood-burning equipment. The disclosure must describe the negative health impacts of PM<sub>2.5</sub>. The requirement for disclosure of the negative health impacts of PM<sub>2.5</sub> exposure is consistent with the Air District's mission to educate the public, discourage wood-burning, and encourage the transition to cleaner heating alternatives. Guidance from the Air District to develop language in the disclosure documents would be provided to real estate and rental associations.

### **2.3.9 REQUIREMENT FOR RENTAL PROPERTIES**

The Air District is proposing a new requirement that all rental properties in areas with natural gas availability install a permanently installed form of heat that does not burn wood or solid fuel. This supports existing requirements in the California Health and Safety Code, Division 13, Part 1.5, Regulation of Buildings Used for Human Habitation, which requires landlords to provide adequate heat to tenants. This proposed requirement further ensures all landlords provide tenants with a cleaner heating option than burning wood in areas that have natural gas by disallowing all rental properties in areas with natural gas service from claiming the Sole Source of Heat exemption.

### **2.3.10 REQUIREMENT FOR NEW BUILDING CONSTRUCTION**

Rule 6-3 currently allows any new construction of a building or structure to install a wood-burning device that meets U.S. EPA certification requirements. The Air District proposes to amend and strengthen this requirement by ensuring new construction in the Bay Area transition to only the cleanest, most efficient heating options, such as, but not limited to, gas-fueled or electric heaters. Under this proposed amendment, new buildings could no longer install a wood-burning fireplace or U.S. EPA-certified wood heater.

### **2.3.11 REQUIREMENT FOR FIREPLACE OR CHIMNEY REMODELS**

Rule 6-3 currently requires the installation of a gas-fueled, electric, or U.S. EPA-certified wood-burning device as part of a remodel of a fireplace or chimney, when that remodel construction requires a local building permit. The current requirement of the rule is

vague and may unreasonably require any fireplace or chimney remodel, regardless of the scale or scope of the remodel job, to install a U.S. EPA-certified device.

The Air District proposes to amend and clarify this requirement so that only remodels with costs greater than \$15,000 (excluding cost of local building permit) and that require a building permit would trigger the installation of a U.S. EPA-certified, gas-fueled, or electric device. Enforcement of this provision would be by the local city or county where the building permit is received.

### **2.3.12 REGISTRATION REQUIREMENT**

The Air District proposes to establish a new registration program that would require all claimants of Sole Source of Heat exemption to register their U.S. EPA-certified wood-burning devices. The Air District is proposing a free and voluntary registration program with a requirement to renew the registration every five years. Registrants would be required to maintain all documents that verify Sole Source of Heat exemption status and would be required to be able to demonstrate that registered devices are operated according to manufacture specifications.

This proposed registration requirement would provide an inventory of U.S. EPA-certified wood-burning devices in geographical areas without natural gas service and allow the Air District to strategically allocate resources to households that are not using U.S. EPA-certified devices in areas without natural gas service. This proposed requirement also would allow Air District staff to better address wood smoke concerns in certain communities that do have natural gas service and are using wood-burning devices during WSTA Alerts.

### **2.3.13 MANDATORY BURN BAN**

Rule 6-3 prohibits wood-burning in the Bay Area when forecasts indicate PM<sub>2.5</sub> concentrations will reach unhealthy levels, exceeding the 24-hour PM<sub>2.5</sub> federal health standard of 35 µg/m<sup>3</sup> resulting in a WSTA Alert. This requirement is currently named in the rule as “Solid-fuel Burning Curtailment.”

The Air District does not plan to amend the standard of this requirement; however, the Air District is proposing to amend the name by changing it from “Solid-fuel Burning Curtailment” to “Mandatory Burn Ban.” A name change would effectively communicate to the general public that when a WSTA Alert is declared, a “Mandatory Burn Ban” is in effect and wood burning is illegal in the Bay Area.

## **2.4 POTENTIAL EMISSION REDUCTIONS**

In 2008, the Air District estimated 983 tons per year of PM<sub>2.5</sub> reduction from the implementation of Rule 6-3 based on data from the 2005 emissions inventory. The Air District estimates a PM<sub>2.5</sub> emissions reduction of 321 tpy from the 2015 proposed

amendments to Rule 6-3. Table 2-2 summarizes the estimated reductions expected from the proposed amendment.

**TABLE 2-2**

**Summary of Estimated PM<sub>2.5</sub> Emission Reductions**

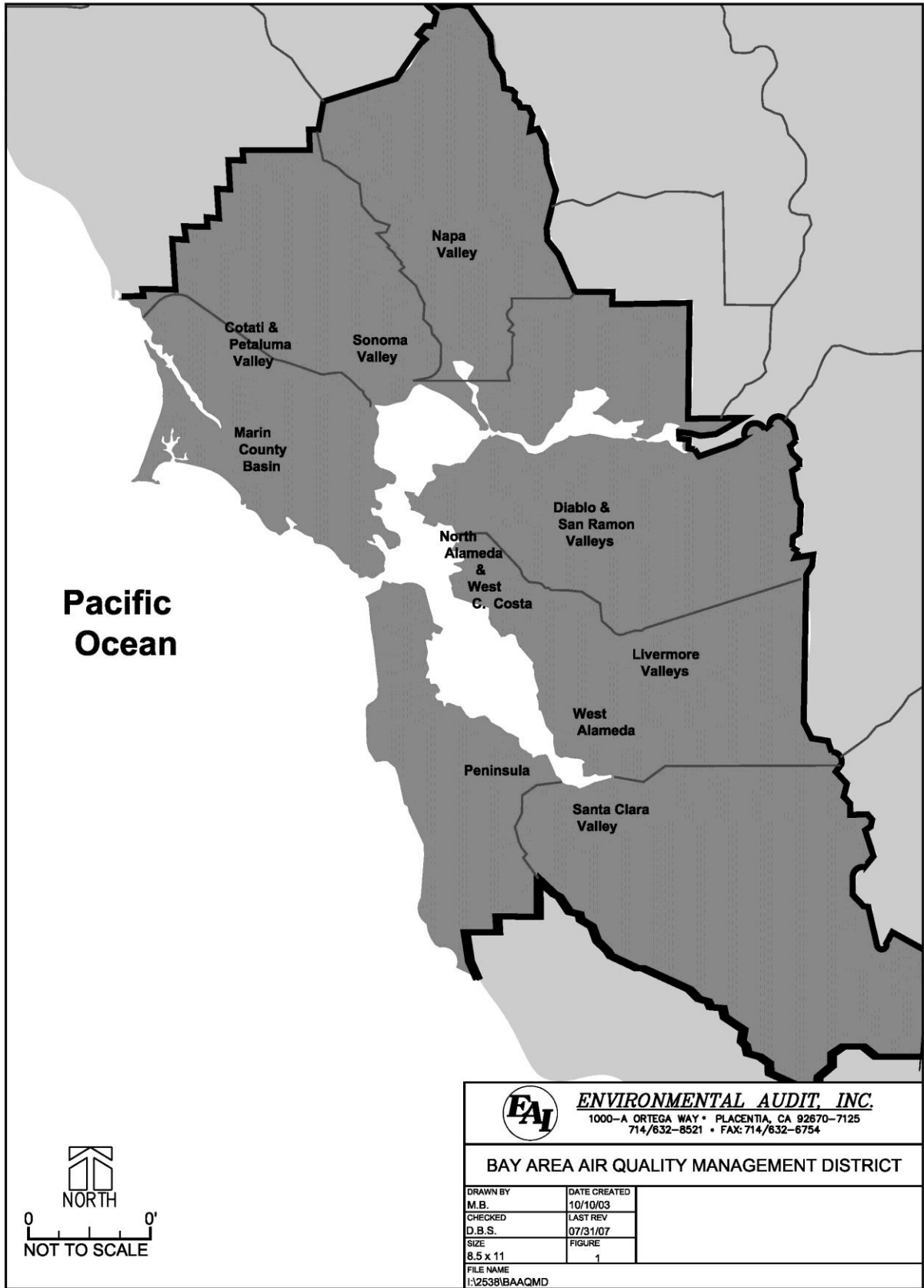
<b>2015 Proposed Amendments</b>	<b>Estimated Reduction (PM<sub>2.5</sub>)</b>
Sole Source of Heat Exemption (Requires U.S. EPA certified device)	260 tpy
Requirement for Rental Properties	17 tpy
New Building Construction	44 tpy
<b>Total</b>	<b>321 tpy</b>

## 2.6 AFFECTED AREA

The proposed rule amendments would apply to wood burning devices under BAAQMD jurisdiction. The BAAQMD jurisdiction includes all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma counties (approximately 5,600 square miles). The San Francisco Bay Area is characterized by a large, shallow basin surrounded by coastal mountain ranges tapering into sheltered inland valleys. The combined climatic and topographic factors result in increased potential for the accumulation of air pollutants in the inland valleys and reduced potential for buildup of air pollutants along the coast. The Basin is bounded by the Pacific Ocean to the west and includes complex terrain consisting of coastal mountain ranges, inland valleys, and bays.

BAAQMD proposes to regulate PM<sub>2.5</sub> wood burning currently subject to District regulations. The devices affected by the proposed rule amendments are located within the jurisdiction of the Bay Area Air Quality Management District (see Figure 1).

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## CHAPTER 3

### Environmental Checklist

#### INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

#### GENERAL INFORMATION

Project Title:	Regulation 6: Particulate Matter and Visible Emissions, Rule 3: Wood-burning Devices
Lead Agency Name:	Bay Area Air Quality Management District
Lead Agency Address:	939 Ellis Street San Francisco, California 94109
Contact Person:	Guy Gimlen
Contact Phone Number:	415-749-4734
Project Location:	These draft rules apply to the area within the jurisdiction of the Bay Area Air Quality Management District, which encompasses all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties.
Project Sponsor's Name:	Bay Area Air Quality Management District
Project Sponsor's Address:	939 Ellis Street San Francisco, California 94109
General Plan Designation:	Rule 6-3 applies to wood burning devices located throughout the District, which are primarily located in land use areas designated as residential.
Zoning:	Rule 6-3 applies to wood burning devices throughout the District, which are primarily located in residentially zoned areas.
Description of Project:	See "Background" in Chapter 2.
Surrounding Land Uses and Setting:	See "Affected Area" in Chapter 2.
Other Public Agencies Whose Approval is Required:	None

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aesthetics               | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality                        |
| <input type="checkbox"/> Biological Resources     | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology / Soils                    |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials      | <input type="checkbox"/> Hydrology / Water Quality          |
| <input type="checkbox"/> Land Use / Planning      | <input type="checkbox"/> Mineral Resources                  | <input type="checkbox"/> Noise                              |
| <input type="checkbox"/> Population / Housing     | <input type="checkbox"/> Public Services                    | <input type="checkbox"/> Recreation                         |
| <input type="checkbox"/> Transportation / Traffic | <input type="checkbox"/> Utilities / Service Systems        | <input type="checkbox"/> 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.

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Signature:

Date:

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Printed Name:

Date:

## 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
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**I. AESTHETICS.**

Would the project:

- |  |                          |                          |                                     |                                     |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Substantially damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?                             | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

**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. Scenic highways or corridors are located throughout the Bay Area.

The proposed rule amendments focus on PM2.5 emissions from wood-burning devices. The amendments to Rule 6-3 will affect wood-burning devices located within the Bay Area. Wood-burning devices are generally located inside of residential units within residential areas, while some are located in commercial facilities such hotels, restaurants, lodges, etc.

**Regulatory Background**

Visual resources are generally protected by the City and/or County General Plans through land use and zoning requirements.

## Discussion of Impacts

**I a-d.** Regulation 6, Rule 3 (Rule 6-3) is designed to limit emissions of particulate matter and visible emissions from wood-burning devices. The proposed amendments to Rule 6-3 would further reduce particulate matter emissions from wood-burning devices by further limiting exemptions; adopting the more stringent U.S. EPA standards; strengthening the visible emissions limitation; requiring real estate and rental disclosures to communicate PM2.5 health hazards; and transition new building construction and rental properties to cleaner heating options. The proposed amendments help ensure the Bay Area continues to reduce PM2.5 emissions from wood-burning and transition to cleaner, more efficient heating alternatives.

The amendments to Rule 6-3 would establish criteria for the sale and installation of wood-burning devices. These requirements would control the type of permanently installed indoor or outdoor wood-burning devices that can be installed or used to replace existing equipment. The Rule 6-3 compliant devices are similar in size and structure as the non-compliant devices, therefore this requirement is not expected to have an effect on the visual character of the environment. The proposed amendments to Rule 6-3 would reduce emissions of PM, which is expected to have a beneficial impact on visibility, as well as air quality.

The amendments to Rule 6-3 would not require any new development, and compliant devices are similar to non-compliant devices. Any construction activities to replace non-compliant wood-burning devices, or install alternative heating devices, would occur within existing dwellings and structures. Therefore, obstruction of scenic resources or degrading the visual character of a site, including but not limited to: trees, rock outcroppings, or historic buildings, is not expected.

The amendments to Rule 6-3 do not require any light generating equipment for compliance, so no additional light or glare would be created to affect day or nighttime views in the District.

## Conclusion

Based upon these considerations, no significant adverse aesthetic impacts are expected from adoption of the proposed amendments to Rule 6-3.

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	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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**II. AGRICULTURE and FOREST RESOURCES.**

In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.--Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code 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  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |



conversion of forest land to non-forest use?

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## **Setting**

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. Some of these agricultural lands are under Williamson Act contracts.

The proposed rule amendments focus on PM<sub>2.5</sub> emissions from wood-burning devices. The amendments to Rule 6-3 will affect wood-burning devices located within the Bay Area. Wood-burning devices are generally located inside of residential units within residential areas, while some are located in commercial facilities such hotels, restaurants, lodges, etc. Agricultural or forest resources are typically not located within these residential areas within 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.

## **Discussion of Impacts**

**II a-e.** The amendments to Rule 6-3 are designed to limit emissions of PM and visible emissions from wood-burning devices. The proposed rule amendments would not require conversion of existing agricultural land to other uses. The proposed rule amendments are not expected to conflict with existing agriculture related zoning designations or Williamson Act contracts. Williamson Act lands within the boundaries of the BAAQMD would not be affected. No effects on agricultural resources are expected because the proposed rule amendments would not require any new development, but would require the replacement of non-compliant wood-burning devices with U.S. EPA-compliant wood-burning devices, and may result in the conversion from wood-burning to alternative heating devices. All of these activities would be expected to occur within existing residential units or commercial facilities. 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.

## **Conclusion**

Based upon these considerations, no significant adverse impacts to agricultural and forest resources are expected from the adoption of the proposed amendments to Rule 6-3.

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	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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### III. AIR QUALITY

When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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### Setting

#### Meteorological Conditions

The summer climate of the West Coast is dominated by a semi-permanent high centered over the northeastern Pacific Ocean. Because this high pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus the conditions that persist along the coast of California during summer are a northwest air flow and negligible precipitation. A thermal low pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the San Francisco Bay Area much of the summer.

In winter, the Pacific High weakens and shifts southward, upwelling ceases, and winter storms become frequent. Almost all of the Bay Area's annual precipitation takes place in the November through April period. During the winter rainy periods, inversions are weak or nonexistent, winds are often moderate and air pollution potential is very low. During winter periods when the

Pacific high becomes dominant, inversions become strong and often are surface based; winds are light and pollution potential is high. These periods are characterized by winds that flow out of the Central Valley into the Bay Area and often include tule fog.

### **Topography**

The San Francisco Bay Area is characterized by complex terrain consisting of coastal mountain ranges, inland valleys, and bays. Elevations of 1,500 feet are common in the higher terrain of this area. Normal wind flow over the area becomes distorted in the lower elevations, especially when the wind velocity is not strong. This distortion is reduced when stronger winds and unstable air masses move over the areas. The distortion is greatest when low level inversions are present with the surface air, beneath the inversion, flowing independently of the air above the inversion.

### **Winds**

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate produces a jet that sweeps eastward but widens downstream producing southwest winds at Berkeley and northwest winds at San Jose; a branch curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Carquinez Strait, the Golden Gate, or San Bruno Gap.

In winter, the Bay Area experiences periods of storminess and moderate-to-strong winds and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon and otherwise light and variable winds.

### **Temperature**

In summer, the distribution of temperature near the surface over the Bay Area is determined in large part by the effect of the differential heating between land and water surfaces. This process produces a large-scale gradient between the coast and the Central Valley as well as small-scale local gradients along the shorelines of the ocean and bays. The winter mean temperature high and lows reverse the summer relationship; daytime variations are small while mean minimum nighttime temperatures show large differences and strong gradients. The moderating effect of the ocean influences warmer minimums along the coast and penetrating the Bay. The coldest temperatures are in the sheltered valleys, implying strong radiation inversions and very limited vertical diffusion.

## **Inversions**

A primary factor in air quality is the mixing depth, i.e., the vertical dimension available for dilution of contaminant sources near the ground. Over the Bay Area, the frequent occurrence of temperature inversions limits this mixing depth and consequently limits the availability of air for dilution. A temperature inversion may be described as a layer or layers of warmer air over cooler air.

## **Precipitation**

The San Francisco Bay Area climate is characterized by moderately wet winters and dry summers. Winter rains (December through March) account for about 75 percent of the average annual rainfall; about 90 percent of the annual total rainfall is received in November to April period; and between June and September, normal rainfall is typically less than 0.10 inches. Annual precipitation amounts show greater differences in short distances. Annual totals exceed 40 inches in the mountains and are less than 15 inches in the sheltered valleys.

## **Pollution Potential**

The Bay Area is subject to a combination of physiographic and climatic factors which result in a low potential for pollutant buildups near the coast and a high potential in sheltered inland valleys. In summer, areas with high average maximum temperatures tend to be sheltered inland valleys with abundant sunshine and light winds. Areas with low average maximum temperatures are exposed to the prevailing ocean breeze and experience frequent fog or stratus. Locations with warm summer days have a higher pollution potential than the cooler locations along the coast and bays.

In winter, pollution potential is related to the nighttime minimum temperature. Low minimum temperatures are associated with strong radiation inversions in inland valleys that are protected from the moderating influences of the ocean and bays. Conversely, coastal locations experience higher average nighttime temperatures, weaker inversions, stronger breezes and consequently less air pollution potential.

## **Air Quality**

### **Criteria Pollutants**

It is the responsibility of the BAAQMD to ensure that state and federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), PM<sub>10</sub>, PM<sub>2.5</sub>, sulfur dioxide (SO<sub>2</sub>) and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride.

The state and national ambient air quality standards for each of these pollutants and their effects on health are summarized in Table 3-1. The BAAQMD monitored levels of various criteria pollutants at 25 monitoring stations in 2014.

The 2014 air quality data from the BAAQMD monitoring stations are presented in Table 3-2. The data indicate that the air quality at all monitoring stations were below the state standard and federal ambient air quality standards for CO, NO<sub>2</sub>, and SO<sub>2</sub>. The federal 8-hour ozone standard was exceeded on 8 days in the District in 2014, while the state 8-hour standard was exceeded on 10 days. The State 1-hour ozone standard was exceeded on 3 days in 2014 in the District. The ozone standards are most frequently exceeded in the Eastern District (Livermore (7 days for the state 8 hour standard and 4 days for the federal 8 hour standard), following by San Ramon (4 days for the state 8 hour standard and 3 days for the federal 8 hour standard) and San Martin (3 days for the state 8 hour standard and 5 days for the federal 8 hour standard) (see Table 3-2).

Air quality conditions in the San Francisco Bay Area have improved since the District was created in 1955. Ambient concentrations of air pollutants and the number of days on which the region exceeds air quality standards have fallen dramatically (see Table 3-3). The District is in attainment of the State and federal ambient air quality standards for CO, NO<sub>x</sub>, and SO<sub>2</sub>. The District is not considered to be in attainment with the ozone standards and State PM<sub>10</sub> and PM<sub>2.5</sub> standards.

**TABLE 3-1  
Federal and State Ambient Air Quality Standards**

AIR POLLUTANT	STATE STANDARD CONCENTRATION/ AVERAGING TIME	FEDERAL PRIMARY STANDARD CONCENTRATION/ AVERAGING TIME	MOST RELEVANT EFFECTS
Ozone	0.09 ppm, 1-hr. avg. > 0.070 ppm, 8-hr	0.075 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.> 0.10 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. >	0.5 ppm, 3-hr. avg.> 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 <sub>10</sub> )	20 µg/m <sup>3</sup> , annual arithmetic mean > 50 µg/m <sup>3</sup> , 24-hr average>	150 µg/m <sup>3</sup> , 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 <sub>2.5</sub> )	12 µg/m <sup>3</sup> , annual arithmetic mean>	15 µg/m <sup>3</sup> , annual arithmetic mean> 35 µg/m <sup>3</sup> , 24-hour average>	Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease; elderly; children.
Sulfates	25 µg/m <sup>3</sup> , 24-hr avg. >=		(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Lead	1.5 µg/m <sup>3</sup> , 30-day avg. >=	1.5 µg/m <sup>3</sup> , calendar quarter> 0.15 µg/m <sup>3</sup> , 3-mo. avg. >	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	In sufficient amount to give an extinction coefficient >0.23 inverse kilometers (visual range to less than 10 miles) with relative humidity less than 70%, 8-hour average (10am – 6pm PST)		Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent

**TABLE 3-2  
Bay Area Air Pollution Summary - 2014**

MONITORING STATIONS	OZONE						CARBON MONOXIDE			NITROGEN DIOXIDE			SULFUR DIOXIDE			PM <sub>10</sub>				PM <sub>2.5</sub>					
	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/ Cal 1-hr	Max 1-hr	Max 24-hr	Nat/ Cal 1-hr	Ann Avg	Max 24-hr	Nat Days	Cal Days	Max 24-hr	Nat 24-hr Days	3-Yr Avg	Ann Avg	3-Yr Avg	
<b>North Counties</b>	(ppb)						(ppm)			(ppb)			(ppb)			(µm <sup>3</sup> )				(µm <sup>3</sup> )					
Napa*	74	0	66	0	0	58	2.2	1.4	0	46	8	0	-	-	-	15.8	39	0	0	29.9	0	*	12.0	*	
San Rafael	88	0	68	0	0	56	1.9	1.1	0	62	11	0	-	-	-	14.1	41	0	0	38.1	1	22	10.8	9.8	
Sebastopol*	67	0	61	0	0	*	1.4	0.9	0	44	4	0	-	-	-	-	-	-	-	26.2	0	*	7.7	*	
Vallejo	77	0	68	0	0	58	2.5	2.1	0	50	8	0	23.9	2.4	0	-	-	-	-	39.6	1	26	9.9	9.6	
<b>Coast/Central Bay</b>																									
Laney College Fwy*	-	-	-	-	-	-	2.0	1.1	0	65	17	0	-	-	-	-	-	-	-	26.0	0	*	8.4	*	
Oakland	83	0	68	0	0	47	2.8	1.7	0	82	12	0	-	-	-	-	-	-	-	37.6	1	24	8.5	9.4	
Oakland-West*	72	0	59	0	0	47	3.0	2.6	0	56	14	0	16.5	3.3	0	-	-	-	-	38.8	1	*	9.5	*	
Richmond	-	-	-	-	-	-	-	-	-	-	-	-	19.2	5.0	0	-	-	-	-	-	-	-	-	-	
San Francisco	79	0	69	0	0	47	1.6	1.2	0	84	12	0	-	-	-	17.0	36	0	0	33.2	0	23	7.7	8.6	
San Pablo*	75	0	60	0	0	52	1.8	1.0	0	52	9	0	15.3	5.8	0	16.4	46	0	0	38.2	1	*	10.5	*	
<b>Eastern District</b>																									
Bethel Island	92	0	71	0	1	67	0.9	0.7	0	33	5	0	10.5	3.4	0	16.7	61	0	1	-	-	-	-	-	
Concord	95	1	80	2	2	64	1.4	1.1	0	48	8	0	29.1	4.5	0	14.2	43	0	0	30.6	0	22	6.6	7.0	
Crockett	-	-	-	-	-	-	-	-	-	-	-	-	25.7	5.4	0	-	-	-	-	-	-	-	-	-	
Fairfield	81	0	70	0	0	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Livermore	93	0	80	4	7	72	-	-	-	49	10	0	-	-	-	-	-	-	-	42.9	1	27	7.6	7.5	
Martinez	-	-	-	-	-	-	-	-	-	-	-	-	21.2	4.6	0	-	-	-	-	-	-	-	-	-	
Patterson Pass	-	-	-	-	-	-	-	-	-	21	3	0	-	-	-	-	-	-	-	-	-	-	-	-	
San Ramon	86	0	77	3	4	67	-	-	-	37	6	0	-	-	-	-	-	-	-	-	-	-	-	-	
<b>South Central Bay</b>																									
Hayward	96	1	75	0	4	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Redwood City	86	0	65	0	0	56	3.2	1.6	0	55	11	0	-	-	-	-	-	-	-	35.0	0	23	7.1	8.8	
<b>Santa Clara Valley</b>																									
Gilroy	84	0	74	0	4	66	-	-	-	-	-	-	-	-	-	-	-	-	-	25.7	0	18	6.8	7.6	
Los Gatos	90	0	77	1	3	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
San Jose	89	0	66	0	0	60	2.4	1.9	0	58	13	0	3.0	0.9	0	19.9	55	0	1	60.4	2	30	8.4	10.0	
San Jose Freeway*	-	-	-	-	-	-	2.2	1.9	0	65	*	0	-	-	-	-	-	-	-	24.3	0	*	*	*	
San Martin	97	1	78	3	5	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Total Days over Standard</b>		<b>3</b>		<b>5</b>	<b>10</b>				<b>0</b>			<b>0</b>			<b>0</b>			<b>0</b>	<b>2</b>		<b>3</b>				

\* PM2.5 monitoring using the federally accepted method began at Napa, Oakland West, and San Pablo in December 2012. Therefore, 3-year average PM2.5 statistics are not available. Air monitoring at Sebastopol began in January 2014. Therefore, 3-year average statistics for ozone and PM2.5 are not available. In addition, the Sebastopol site replaced the Santa Rosa site which closed on December 13, 2013. Therefore, statistics for Santa Rosa are not provided in the 2014 summary. Near-road air monitoring at Laney College Freeway began in February 2014. Therefore, 3-year average PM2.5 statistics are not available. Near-road air monitoring at San Jose Freeway began in September 2014. Therefore, annual average NO<sub>2</sub> and 3-year average PM 2.5 statistics are not available.

(ppb) = parts per billion (ppm) = parts per million, (µg/m<sup>3</sup>) = micrograms per cubic meter. (ppb) = parts per billion (ppm) = parts per million, (µg/m<sup>3</sup>) = micrograms per cubic meter.

**TABLE 3-3**

**Bay Area Air Quality Summary  
Days over Standards**

YEAR	OZONE			CARBON MONOXIDE				NO <sub>x</sub>		SULFUR DIOXIDE		PM <sub>10</sub>		PM <sub>2.5</sub>
	8-Hr	1-Hr	8-Hr	1-Hr		8-Hr		1-Hr		1-Hr	24-Hr	24-Hr*		24-Hr
	Nat	Cal	Cal	Nat	Cal	Nat	Cal	Nat	Cal	Nat	Cal	Nat	Cal	Nat
2005	5	9	9	0	0	0	0	0	0	0	0	0	6	21
2006	17	18	22	0	0	0	0	1	0	0	0	0	15	10
2007	2	4	9	0	0	0	0	0	0	0	0	0	4	14
2008	12	9	20	0	0	0	0	0	0	2	0	0	5	12
2009	8	11	13	0	0	0	0	0	0	0	0	0	1	11
2010	9	8	00	0	0	0	0	0	0	0	0	0	2	6
2011	4	5	10	0	0	0	0	0	0	0	0	0	3	8
2012	4	3	8	0	0	0	0	1	0	0	0	0	2	3
2013	3	3	3	0	0	0	0	0	0	0	0	0	6	13
2014	5	3	10	0	0	0	0	0	0	0	0	0	2	3

**Toxic Air Pollutants**

The BAAQMD maintains a database that contains information concerning emissions of TACs from permitted stationary sources in the Bay Area. This inventory, and a similar inventory for mobile and area sources compiled by CARB, is used to plan strategies to reduce public exposure to TACs. The detailed concentrations of various TACs are reported in the BAAQMD, Toxic Air Contaminant Control Program, 2010 Annual Report (BAAQMD, 2010) and summarized in Table 3-4. The 2010 TAC data show decreasing concentrations of many TACs in the Bay Area. The most dramatic emission reductions in recent years have been for certain chlorinated compounds that are used as solvents including 1,1,1-trichloroethane, methylene chloride, and perchloroethylene. Table 3-4 contains a summary of ambient air toxics listed by compound.



TABLE 3-4

Summary of BAAQMD Ambient Air Toxics Monitoring Data<sup>(1)</sup>

Pollutant	Units	Average MDL <sup>(1)</sup>	% less than MDL	Max Sample Value	Min Sample Value	Average Sample Value <sup>(2)(3)</sup>
1,3-Butadiene	ppb	5.73E-02	87%	3.30E-01	0.00E+00	3.84E-02
Acetaldehyde	ppb	5.86E-02	0%	3.10E+00	1.97E-01	6.84E-01
Acetone	ppb	1.27E-01	1%	3.50E+01	0.00E+00	2.25E+00
Acetonitrile	ppb	2.55E-01	26%	2.34E+00	0.00E+00	5.09E-01
Antimony	µg/m <sup>3</sup>	1.50E-03	78%	5.02E-02	00.0E+00	2.36E-03
Arsenic	µg/m <sup>3</sup>	7.81E-04	92%	2.92E-03	0.00E+00	4.32E-04
Benzene	ppb	2.41E-02	1%	1.26E+00	0.00E+00	2.17E-01
Bromomethane	ppb	3.00E-02	95%	7.30E-02	1.50E-02	1.65E-02
Cadmium	µg/m <sup>3</sup>	7.81E-04	85%	1.92E-02	0.00E+00	8.67E-04
Carbon Tetrachloride	ppb	1.14E-02	0%	1.70E-01	7.00E-02	1.03E-01
Chlorine	µg/m <sup>3</sup>	0.00E+00	5%	3.64E+00	0.00E+00	3.43E-01
Chloroform	ppb	1.14E-02	46%	8.00E-02	0.00E+00	1.95E-02
Chromium	µg/m <sup>3</sup>	1.02E-03	25%	1.00E-01	0.00E+00	2.48E-03
Cis-1,3-Dichloropropylene	ppb	1.00E-01	100%	5.00E-02	5.00E-02	5.00E-02
Cobalt	µg/m <sup>3</sup>	7.81E-04	76%	3.26E-03	0.00E+00	5.25E-04
Copper	µg/m <sup>3</sup>	4.00E-04	31%	4.90E-02	0.00E+00	5.74E-03
Dichloromethane	ppb	1.00E-01	37%	4.40E+00	0.00E+00	1.80E-01
Ethyl Alcohol	ppb	3.00E-01	0%	2.27E+01	4.00E+00	1.16E+01
Ethylbenzene	ppb	6.18E-02	53%	1.20E+00	0.00E+00	8.25E-02
Ethylene Dibromide	ppb	1.00E-02	100%	0.00E+00	0.00E+00	5.00E-03
Ethylene Dichloride	ppb	1.00E-01	100%	0.00E+00	0.00E+00	5.00E-02
Formaldehyde	ppb	6.76E-02	0%	6.30E+00	2.00E-01	1.46E+00
Lead	µg/m <sup>3</sup>	7.81E-04	40%	2.40E-01	0.00E+00	4.85E-03
M/P Xylene	ppb	6.18E-02	9%	5.27E+00	0.00E+00	3.18E-01
Magnesium	µg/m <sup>3</sup>	0.00E+00	36%	4.88E-01	0.00E+00	5.54E-02
Manganese	µg/m <sup>3</sup>	7.81E-04	25%	2.00E-01	0.00E+00	7.06E-03
Mercury	µg/m <sup>3</sup>	0.00E+00	98%	1.70E-03	0.00E+00	2.24E-05
Methyl Chloroform	ppb	2.73E-02	88%	4.30E+00	0.00E+00	3.22E-02
Methyl Ethyl Ketone	ppb	1.00E-01	28%	1.78E+00	0.00E+00	1.89E-01
Nickel	µg/m <sup>3</sup>	4.50E-03	57%	6.00E-02	0.00E+00	3.39E-03
O-Xylene	ppb	4.82E-02	30%	5.12E+00	0.00E+00	1.21E-01

**TABLE 3-4 (Concluded)**

Pollutant <sup>(4)</sup>	Units	Average MDL <sup>(2)</sup>	% less than MDL	Max Sample Value	Min Sample Value	Average Sample Value <sup>(1)(3)</sup>
PAHs <sup>(4)</sup>	ng/m <sup>3</sup>					1.90E-01
Selenium	µg/m <sup>3</sup>	7.81E-04	76%	8.60E-03	0.00E+00	8.04E-04
Styrene	ppb	1.00E-01	96%	1.20E-01	5.00E-02	5.22E-02
Sulfur	µg/m <sup>3</sup>	0.00E+00	0%	1.73E+00	3.74E-02	3.56E-01
Tetrachloroethylene	ppb	5.68E-03	21%	2.80E-01	0.00E+00	1.88E-02
Toluene	ppb	6.18E-02	2%	4.33E+00	0.00E+00	6.22E-01
Trans-1,3-Dichloropropylene	ppb	1.00E-01	100%	5.00E-02	5.00E-02	5.00E-02
Trichloroethylene	ppb	1.14E-02	84%	5.20E-01	0.00E+00	1.42E-02
Trichlorofluoromethane	ppb	1.00E-02	0%	6.90E-01	1.00E-02	1.96E-01
Vanadium	µg/m <sup>3</sup>	4.00E-04	72%	5.10E-03	0.00E+00	5.34E-04
Vinyl Chloride	ppb	1.00E-01	100%	0.00E+00	0.00E+00	5.00E-02
Zinc	ng/m <sup>3</sup>	1.80E-03	0%	1.90E-01	0.00E+00	1.38E-02

Source: BAAQMD 2010 Toxic Air Contaminant Monitoring Data. Data are a summary of data from all monitoring stations within the District.

1. If an individual sample value was less than the MDL (Minimum Detection Limit), then 1/2 MDL was used to determine the Average Sample Value.
2. Some samples (especially metals) have individual MDLs for each sample. An average of these MDLs was used to determine 1/2 MDL for the Average Sample Value.
3. Data for these two substances was collected but not presented because the sampling procedure is not sanctioned for use by EPA or ARB.
4. For compounds with 100% of sample values less than MDL, please use caution using the assumed Average Sample Values.

## Regulatory Background

### Criteria Pollutants

At the federal level, the Clean Air Act (CAA) Amendments of 1990 give the U.S. EPA additional authority to require states to reduce emissions of ozone precursors and particulate matter in non-attainment areas. The amendments set attainment deadlines based on the severity of problems. At the state level, CARB has traditionally established state ambient air quality standards, maintained oversight authority in air quality planning, developed programs for reducing emissions from motor vehicles, developed air emission inventories, collected air quality and meteorological data, and approved state implementation plans. At a local level, California’s air districts, including the BAAQMD, are responsible for overseeing stationary source emissions, approving permits, maintaining emission inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA.

The BAAQMD is governed by a 22-member Board of Directors composed of publicly-elected officials apportioned according to the population of the represented counties. The

Board has the authority to develop and enforce regulations for the control of air pollution within its jurisdiction. The BAAQMD is responsible for implementing emissions standards and other requirements of federal and state laws. It is also responsible for developing air quality planning documents required by both federal and state laws.

### **Toxic Air Contaminants**

TACs are regulated in the District through federal, state, and local programs. At the federal level, TACs are regulated primarily under the authority of the CAA. Prior to the amendment of the CAA in 1990, source-specific NESHAPs were promulgated under Section 112 of the CAA for certain sources of radionuclides and Hazardous Air Pollutants (HAPs).

Title III of the 1990 CAA amendments requires U.S. EPA to promulgate NESHAPs on a specified schedule for certain categories of sources identified by U.S. EPA as emitting one or more of the 189 listed HAPs. Emission standards for major sources must require the maximum achievable control technology (MACT). MACT is defined as the maximum degree of emission reduction achievable considering cost and non-air quality health and environmental impacts and energy requirements. All NESHAPs were to be promulgated by the year 2000. Specific incremental progress in establishing standards were to be made by the years 1992 (at least 40 source categories), 1994 (25 percent of the listed categories), 1997 (50 percent of remaining listed categories), and 2000 (remaining balance). The 1992 requirement was met; however, many of the four-year standards were not promulgated as scheduled. Promulgation of those standards has been rescheduled based on court ordered deadlines, or the aim to satisfy all Section 112 requirements in a timely manner.

Many of the sources of TACs that have been identified under the CAA are also subject to the California TAC regulatory programs. CARB developed three regulatory programs for the control of TACs. Each of the programs is discussed in the following subsections.

**Control of TACs Under the TAC Identification and Control Program:** California's TAC identification and control program, adopted in 1983 as Assembly Bill 1807 (AB 1807) (California Health and Safety Code §39662), is a two-step program in which substances are identified as TACs, and airborne toxic control measures (ATCMs) are adopted to control emissions from specific sources. Since adoption of the program, CARB has identified 18 TACs, and CARB adopted a regulation designating all 189 federal HAPs as TACs.

**Control of TACs Under the Air Toxics "Hot Spots" Act:** The Air Toxics Hot Spot Information and Assessment Act of 1987 (AB 2588) (California Health and Safety Code §39656) establishes a state-wide program to inventory and assess the risks from facilities that emit TACs and to notify the public about significant health risks associated with those emissions. Inventory reports must be updated every four years under current state law. The BAAQMD uses a maximum individual cancer risk of 10 in one million, or an ambient concentration above a non-cancer reference exposure level, as the threshold for notification.

Senate Bill (SB) 1731, enacted in 1992 (California Health and Safety Code §44390 et seq.), amended AB 2588 to include a requirement for facilities with significant risks to prepare

and implement a risk reduction plan which will reduce the risk below a defined significant risk level within specified time limits. At a minimum, such facilities must, as quickly as feasible, reduce cancer risk levels that exceed 100 per one million. The BAAQMD adopted risk reduction requirements for perchloroethylene dry cleaners to fulfill the requirements of SB 1731.

**Targeted Control of TACs Under the Community Air Risk Evaluation Program:** In 2004, BAAQMD established the Community Air Risk Evaluation (CARE) program to identify locations with high emissions of toxic air contaminants (TAC) and high exposures of sensitive populations to TAC and to use this information to help establish policies to guide mitigation strategies that obtain the greatest health benefit from TAC emission reductions. For example, BAAQMD will use information derived from the CARE program to develop and implement targeted risk reduction programs, including grant and incentive programs, community outreach efforts, collaboration with other governmental agencies, model ordinances, new regulations for stationary sources and indirect sources, and advocacy for additional legislation.

### **Discussion of Impacts**

**III a.** The proposed amendments to Rule 6-3 are not expected to conflict with or obstruct implementation of the applicable air quality plan. The proposed amendments to Rule 6-3 would further reduce PM emissions from wood-burning devices by further limiting exemptions; adopting the more stringent U.S. EPA standards; strengthening the visible emissions limitation; requiring real estate and rental disclosures to communicated PM2.5 health hazards; and transition new building construction and rental properties to cleaner heating options. The 2010 Clean Air Plan is the most recently adopted air quality plan for the Bay Area. The proposed amendments to Rule 6-3 would contribute directly to meeting the objectives of the 2010 Clean Air Plan by reducing particulate emissions and contributing towards attaining the state and federal ambient air quality standards for PM2.5. Because the proposed rule amendments would reduce PM emissions and meet the objectives of the 2010 Clean Air Plan, the proposed amendments are in compliance with the local air quality plan and are expected to provide beneficial impacts associated with reduced PM2.5 and toxic emissions from wood-burning activities in the Bay Area.

**III b and d.** The proposed amendments to Rule 6-3 would further reduce particulate matter emissions from wood-burning devices by further limiting exemptions; adopting the more stringent U.S. EPA standards; strengthening the visible emissions limitation; requiring real estate and rental disclosures to communicated PM2.5 health hazards; and transition new building construction and rental properties to cleaner heating options. As discussed below, implementation of these amendments are expected to reduce emissions of PM.

**Construction Activities Associated with New Development:** The amendments to Rule 6-3 would eliminate the installation wood-burning devices in new development. The installation of natural gas of electric heating devices in new construction would be similar to the installation of wood-burning devices. U.S. EPA-compliant wood-burning devices exhaust/venting systems typically consist of interconnected ducting. Some systems may require additional ducting for

external air. Since the installation of the compliant devices is expected to be similar to installing natural gas or electric heating devices, the amendments to Rule 6-3 are not expected to produce new development emissions or alter construction emissions. Effective November 1, 2016, no person or builder shall install a wood-burning device in a new building construction upon adoption of the proposed rule amendments.

**Construction Activities Associated with Existing Facilities:** Amendments to Rule 6-3 would reduce the exemptions from the rule for sole-source heat, would require the replacement of non-compliant wood burning devices with U.S. EPA-compliant wood-burning devices, and require installation of new heating systems in some rental properties. The replacement of non-compliant wood burning devices with compliant devices would also be triggered with remodeling activities (costing more than \$15,000).

Replacement of existing non-compliant wood-burning devices with compliant wood-burning devices would require the removal of the old equipment and installation of the new equipment. Depending on the type of compliant wood-burning device the exhaust/venting system may be reused, lined, retrofitted or replaced. The new exhaust/venting system may be placed within the existing duct system. It was assumed that wood-burning devices can be installed or replaced using manual labor and that replacement and installation would occur in one day.

Therefore, since the construction component of installing non-compliant or compliant wood-burning devices is similar, no increase in emissions is expected from the installation of compliant wood-burning devices, instead of non-compliant appliances. New heating systems that would be installed in rental properties would include the purchase of and installation new heaters and ducting. The installation of new heating systems would not require extensive construction but would require that new heaters be placed within the homes and the vents and ducting systems be installed. These construction activities are expected to be minor and require one to two days to install. Therefore, the proposed amendments to Rule 6-3 are not expected to generate any new construction emissions.

### **Operational Air Quality Impacts**

The overall objective of the proposed rule amendments is to reduce PM10 and PM2.5 emissions from wood-burning devices. The proposed amendments will reduce emissions by requiring that U.S. EPA-compliant wood-burning devices be used, include Mandatory Burn Bans, and could require the conversion of some facilities from wood-burning devices for heating to alternative heating devices, e.g., natural gas, propane, or electric.

Since Rule 6-3 was adopted, PM2.5 emissions have been reduced by up to 59 percent in the Bay Area. While the Rule has been successful at reducing regional fine particulate levels, wood smoke continues to cause unhealthy air and impact neighborhoods and communities on a local level. Studies conducted by the Air District in Santa Rosa and the San Geronimo Valley concluded that wood smoke significantly impacts local areas causing localized exceedances of the PM2.5 federal health standard and in some cases, generate up to 70 percent of the PM in that area (BAAQMD, 2015).

Wood-burning devices contribute substantial amounts of fine airborne PM into the atmosphere. It is during the winter months and under certain meteorological conditions that these devices significantly contribute to total fine airborne PM in air. Through the use of ambient PM monitoring, chemical mass balance, Carbon-14 dating combined with Bay Area winter 2014 emission data, the BAAQMD has estimated wood smoke as the single greatest contributor (~30-40 percent) to PM<sub>2.5</sub> on peak days in the Bay Area( BAAQMD, 2015).

Prior to the adoption of Rule 6-3 in 2005, the Air District's emission inventory showed wood-burning devices contributed approximately 17.61 tons per day (tpd) or 6,427 tons per year (tpy) of PM<sub>2.5</sub> emissions (see Table 3-5). Based on 2014 emissions data, it is notable that there was a sizable reduction in PM<sub>2.5</sub> emissions in the Bay Area regionally. The Air District achieved a 59 percent reduction in PM<sub>2.5</sub> emission from wood-burning devices for a total reduction of 2,660 tpy of PM<sub>2.5</sub>. Table 3-5 compares the PM<sub>2.5</sub> emissions in 2005 and 2014 for each of the county's within the BAAQMD.

**TABLE 3-5**  
**2005 and 2014 Summary of PM<sub>2.5</sub> Emissions from Wood Burning**  
**Devices in the BAAQMD**  
**(tons per day)**

<b>COUNTY</b>	<b>2005</b>	<b>2014</b>
Alameda	2.22	1.37
Contra Costa	4.88	2.96
Marin	1.35	0.69
Napa	0.71	0.4
San Francisco	0.3	0.18
San Mateo	1.03	0.58
Santa Clara	3.61	2.18
Solano*	0.9	0.5
Sonoma*	2.59	1.46
Total Bay Area Emissions	17.61 (6,427 tons per year)	10.32 (3,767 tons per year)

\* Portion of the county within the Air District.

The BAAQMD estimates a reduction in PM<sub>2.5</sub> emissions of 310 tons per year from the currently proposed amendments to Rule 6-3. Table 3-6 summarizes the estimated reductions expected for each proposed rule amendment.

**TABLE 3-6**

**Summary of PM<sub>2.5</sub> Emissions Reductions in the BAAQMD  
from Proposed Amendments to Rule 6-3  
(tons per day)**

<b>2015 Proposed Amendments</b>	<b>Estimated PM<sub>2.5</sub> Emission Reduction (tons per year)</b>
Sole Source Heat Exemption (Requires U.S. EPA Certified Device)	260
Requirement for Rental Properties	17
New Building Construction	44
<b>TOTAL EMISSION REDUCTIONS:</b>	<b>321</b>

**Sole Source Heat Exemption:** The proposed exemption requires a person to replace an uncertified wood-burning device with a U.S. EPA-certified wood-burning device in order to claim the “sole source of heat” exemption. The proposed amendments are expected to reduce emissions specifically in areas where there is no natural gas service. Based on census data from 2009-2013, the Air District estimates that approximately 19,000 households used wood as a primary source of heat. Of those households, it is estimated that 50 percent of homes in areas without natural gas have a U.S. EPA-certified wood-burning device for heat and the other 50 percent of the homes have a non-compliant wood-burning devices. The District estimates 260 tons per year of PM<sub>2.5</sub> will be reduced per year from this proposed exemption (see Table 3-7)

**TABLE 3-7**

**Summary of PM2.5 Emissions Reductions in the BAAQMD  
from Modification to the Sole Source Heat Exemption in Rule 6-3  
(tons per day)**

<b>Number of Households</b>	<b>Emission Factor for Device (lbs/year)</b>	<b>Total Annual PM2.5 Emissions (lbs/year)</b>
50% of households (11,500) with U.S. EPA certified wood heaters	U.S. EPA certified heater: 7 lbs/year	30 tpy
50% of households (11,500) with non-compliant wood burning devices	Uncertified device: 60 lbs/year	290 tpy
<b>Estimated Total Emissions Reduced:</b>		<b>260 tpy</b>

**Provide Renters with a Clean Heating Option:** The Air District is proposing an amendment to ensure that all rental properties located in natural gas service areas have a permanently installed source of heat that does not burn wood. Based on the 2009-2013 census data, the Air District estimates approximately 5,000 rental units in the Bay Area use a wood-burning device as their primary source of heat. The Air District estimates that 4,700 of these 5,000 rental properties are in areas without natural gas service and are subject to the Sole Source Heat exemption. If 300 rental properties that previously only had a wood-burning device as a primary source of heat and installs a permanent gas-fueled heater, it is estimate that PM2.5 emissions would be reduce by 17 tons per year (assuming the tenant uses the gas heater the entire winter season) (see Table 3-8).

**TABLE 3-8**

**Summary of PM2.5 Emissions Reductions in the BAAQMD from Modification to Rule 6-3  
to Require Renters with a Clean Heating Option in Areas Serviced by Natural Gas  
(tons per day)**

<b>Devices</b>	<b>PM2.5 Emissions (lbs/year)</b>	<b>Total Annual PM2.5 Emissions (tons/year)</b>
Fireplaces (100)	300	12 tpy
Uncertified Wood Stoves (200)	60	5 tpy
<b>Estimated Total Emissions Reduced:</b>		<b>17 tpy</b>

**Requirements for New Building Construction:** In 2008, the Air District projected 58 tons per year of emissions reduction from a requirement that new construction may only install wood-burning devices that are U.S. EPA-certified. The Air District is currently proposing to strengthen the requirement by prohibiting the installation of wood-burning devices such as fireplaces and U.S. EPA-certified wood-burning heaters in new building construction. This requirement would continue the downward trend of homes using wood-burning devices that



contribute to PM<sub>2.5</sub> emissions. The District estimates the proposed requirement to further reduce emissions by 44 tons per year. These estimates are based on survey results that indicate the types of fuel Bay Area households are burning and the frequency at which the households are burning these fuels. These trends were applied to Association of Bay Area Governments (ABAG) future household projections to estimate the emissions reduction.

Additional PM<sub>2.5</sub> emission reductions are expected to occur from other amendments to Rule 6-3 including, strengthening the visible emission limitation, requirement for disclosure documents during property sales, requirements for fireplace or chimney remodels, and public education efforts. However, the emission reductions for these amendments are not quantifiable due to lack of sufficient data.

Based on the above, the proposed amendment to Rule 6-3 are expected to result in an emission reduction of 321 tons per year of PM<sub>2.5</sub>, providing a large, beneficial air quality impact. Therefore, no significant adverse impacts on air quality are expected as a result of the proposed amendments to Rule 6-3.

**III c.** 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). The overall impact of the proposed amendments to Rule 6-3 is a decrease in PM<sub>2.5</sub> emissions. Therefore, the cumulative air quality impacts of the proposed amendments to Rule 6-3 are expected to be beneficial, resulting in a decrease in PM<sub>2.5</sub> emissions.

**III d.** As discussed above, the proposed amendments to Rule 6-3 are designed to reduce emissions of PM<sub>2.5</sub>. PM emissions from wood burning are sources of Toxic Air Contaminants. PM is a mixture of suspended particles and liquid droplets and includes elements such as carbon and metals, compounds such as nitrates, organics and sulfates and complex mixtures such as diesel exhaust and wood smoke. PM is a leading health concern. A large body of evidence suggests that exposure to PM, particularly fine PM, can cause a wide range of health effects, including aggravation of asthma and bronchitis, an increase in visits to the hospital with respiratory and cardio-vascular symptoms, and a contribution to heart attacks and deaths. The Bay Area is not in attainment of the California standards for PM<sub>2.5</sub>.

The proposed amendments to Rule 6-3 would result in modifications, upgrades and procedural changes to wood-burning devices which are expected to decrease PM emissions, which would include a reduction in TAC emissions. Reducing PM<sub>2.5</sub> emissions, which also contains toxic metals, in these communities, will help improved health and air quality in these communities. Therefore, the proposed rule amendments are expected to result in a decrease in TAC emissions to sensitive receptors and no significant TAC impacts are expected as a result of the amendments to Rule 6-3.

**III e.** Affected facilities are not expected to create objectionable odors affecting a substantial number of people for the following reasons: (1) new installation of compliant wood-burning or alternative heating devices would be the same as installation of non-compliant appliances; (2) the rule amendments would require U.S. EPA-compliant wood-

burning devices with more efficient combustion that would reduce PM2.5 emissions and therefore potentially reduce odors; and (3) the amendments to the rule would require affected rental properties to provide an alternate source of heat reducing wood-burning activities, and potentially reducing odors. Therefore, the proposed rule amendments are expected to have a beneficial impact on air quality, including emissions that may generate odors. The BAAQMD will continue to enforce odor nuisance complaints through Regulation 1, Section 301.

### **Conclusion**

Based upon these considerations, no significant adverse air quality impacts are expected from the adoption of the amendments to Rule 6-3. In fact, the proposed amendments are expected to provide beneficial air quality impacts by reducing PM2.5 emissions and related health benefits associated with reduce exposure to these compounds.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES. Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. A wide variety of biological resources are located within the Bay Area.

The areas affected by the proposed amendments to Rule 6-3 are located in the Bay Area-Delta Bioregion (as defined by the State's Natural Communities Conservation Program). This Bioregion is comprised of a variety of natural communities, which range from salt marshes to chaparral to oak woodland. The areas affected by the proposed amendments to Rule 6-3 are primarily located within residential areas within the Bay Area. The affected areas have largely been graded for residential, and in a few cases, commercial development. Native vegetation, other than landscape vegetation, has generally been removed from residential and commercial areas to accommodate development. Any new development would fall under compliance with the City or County General Plans.

## 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.

## Discussion of Impacts

**IV a – f.** The proposed amendments to Rule 6-3 would further reduce particulate matter emissions from wood-burning devices by further limiting exemptions; adopting the more stringent U.S. EPA standards; strengthening the visible emissions limitation; requiring real estate and rental disclosures to communicated PM<sub>2.5</sub> health hazards; and transition new building construction and rental properties to cleaner heating options. The rule amendments are expected to limit emissions of PM and visible emissions from wood-burning devices. Installation of new compliant devices is expected to be similar to installation of non-compliant devices and would occur within the confines of existing development. For example, the requirement to provide renters with a clean heating option would require installation of new heating device within existing residential units and would not require construction of new development that would impact biological resources. Therefore, installing compliant devices or adding alternative heating systems in existing structures is not expected to create biological impacts. As a result, the proposed rule amendments would

not directly or indirectly affect riparian habitat, federally protected wetlands, or migratory corridors.

The proposed rule amendments would not conflict with local policies or ordinances protecting biological resources, nor would they conflict with local, regional, or state conservation plans because as the amendments will require compliant wood-burning devices in new development or reduce the operation of non-compliant wood-burning devices in existing development. After November 1, 2016, wood-burning devices will no longer be permissible in new construction. The replacement or removal of any wood-burning device would occur within existing residential or commercial development. The proposed rule amendments will also not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan.

### **Conclusion**

The proposed amendments to Rule 6-3 neither requires nor is likely to result in activities that would affect sensitive biological resources. Therefore, no significant adverse impacts on biological resources are expected.

Based upon these considerations, no significant adverse impacts to biological resources are expected from the adoption of the amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. CULTURAL RESOURCES.</b> Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 wood-burning devices affected by the proposed amendments to Rule 6-3 are primarily located within residential areas in the Bay Area. These areas have generally already been graded to accommodate development. Cultural resources would not be expected to be impacted by modifications to existing structures.

## 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).

## Discussion of Impacts

**V a – d.** The proposed rule amendments are not expected to have an effect on cultural resources because the proposed rule amendments would not cause any new development. In the event historic buildings have wood-burning features, the Secretary of the Interior Standards for the Treatment of Historic Properties provide guidance for reviewing any proposed project that may affect historic resources.

The intent of the Standards is to assist the long-term preservation of a historic property’s significance through the preservation, rehabilitation, and maintenance of historic materials and features. The standards pertain to historic buildings of all materials, construction types, sized, and occupancy and encompass the exterior and interior of buildings. The Standards also encompass related landscape features and a building’s site and environment, as well as attached, adjacent, or related new construction.

The Standards have guided agencies in carrying out historic preservation responsibilities at the state and local lever when reviewing projects that may impact historic resources and have been adopted by State and local jurisdictions across the country. Specifically, §15064.5(b)(3) of the CEQA Guidelines states:

*“Generally, a project that follows the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings” (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.”*

Compliance with the Secretary of the Interior’s Standards will assure no significant impact to a historical resource. The amendments to Rule 6-3 allows for existing fireplaces or other wood-burning devices. Therefore, Rule 6-3 is not expected to have significant impacts to historic buildings or require that wood-burning devices in historic buildings be removed or replaced.

The proposed amendments would require that any new wood-burning devices installed be compliant with Rule 6-3. The removal and installation of non-compliant and compliant devices is not expected to require the use of heavy construction equipment, therefore, no impacts to historical resources are expected as a result of amending Rule 6-3. Physical changes are expected to be limited to existing development with non-compliant wood-burning devices or for which alternative heating options must be provided. Non-wood burning and clean burning devices are expected to be pre-fabricated and dropped into place at new or existing facilities without the use of heavy construction equipment. Therefore, no impacts to cultural resources are anticipated to occur as a result of the proposed amendments as no major construction activities are required. Any new residential or commercial operation that could have significant adverse effects on cultural resources would go through the same approval and construction process regardless of whether or not the proposed amendments to Rule 6-3 were in effect.

### **Conclusion**

Based upon these considerations, no significant adverse impacts to cultural resources are expected from the adoption of the amendments to Rule 6-3.



	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VI. GEOLOGY AND SOILS.</b>				
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 know fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 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 wood-burning devices affected by the proposed amendments to Rule 6-3 are primarily located within residential areas in the Bay Area.

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 review procedures that will reduce losses from ground failure during future earthquakes.

### **Discussion of Impacts**

**VI a.** No impacts on geology and soils are anticipated from the proposed amendments to Rule 6-3 which would apply to existing residential and commercial operations. The wood-burning devices to be regulated in accordance with the amendments will not create new development in the area. The proposed amendments do not directly require structural alterations to existing structures.

Any new or remodeled structures in the area must be designed to comply with the California Building Code requirements since the Bay Area is located in a seismically active area. The local cities or counties are responsible for assuring that any new or remodeled structures comply with the California Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. 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 bases 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.

Any new or remodeled residential or commercial operations will be required to obtain building permits, as applicable, for all new or remodeled structures. New development or commercial operations must receive approval of all building plans and building permits to assure compliance with the latest California Building Code prior to commencing construction activities. The issuance of building permits from the local agency will assure compliance with the California Building Code requirements which include requirements for building within seismic hazard zones. No significant impacts from seismic hazards are expected since the project will be required to comply with the California Building Codes. The amendments to Rule 6-3 would not require or promote construction of residential or commercial land use projects. No major construction activities are expected as a result of the proposed amendments to Rule 6-3. The removal and installation of wood-burning devices during remodeling would require a building permit. Therefore, it is expected that wood-burning devices or alternative heating appliances would be installed according to all applicable state and local codes. As a result, substantial exposure of people or structures to the risk of loss, injury, or death involving seismic-related activities is not anticipated as a result of compliance with the amendments to Rule 6-3. Therefore, no significant adverse impacts on geology and soils are expected.

**VI b. – d.** Since the amendments to Rule 6-3 would affect existing and new residential and commercial operations in the area, it is expected that the soil types present in the affected facilities and residences would not be further susceptible to expansive soils or liquefaction due to adoption of the proposed rule amendments. Additionally, subsidence is not expected to occur because grading, or filling activities at affected facilities and residences despite adoption of the proposed amendments would only restrict the installation of wood-burning devices.

**VI e.** The proposed project has no effect on the installation of septic tanks or alternative wastewater disposal systems. Consequently, no impacts from failures of septic systems related to soils incapable of supporting such systems are anticipated.

## **Conclusion**

Based upon these considerations, no significant adverse impacts to geology and soils are expected from the adoption of the amendments to Rule 6-3.

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	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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**VII. GREENHOUSE GAS EMISSIONS.**

Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
- 

**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 warming, a related concept, is the observed increase in the average temperature of the earth’s surface and atmosphere. One identified cause of global warming is an increase of greenhouse gases (GHGs) in the atmosphere. The six major GHGs identified by the Kyoto Protocol are (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), haloalkanes (HFCs), and perfluorocarbons (PFCs). The GHGs absorb longwave radiant energy reflected by the earth, which warms the atmosphere. GHGs also radiate longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation absorbed by the atmosphere is known as the "greenhouse effect." Some studies indicate that the potential effects of global climate change may include rising surface temperatures, loss in snow pack, sea level rise, more extreme heat days per year, and more drought years.

Events and activities, such as the industrial revolution and the increased combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHGs. Approximately 80 percent of GHG emissions in California are from fossil fuel combustion and over 70 percent of GHG emissions are carbon dioxide emissions. The emission inventory in Table 3-9 focuses on GHG emissions due to human activities only, and compiles estimated emissions from industrial, commercial, transportation, domestic, forestry, and agriculture activities in the San Francisco Bay Area region of California. The GHG emission inventory in Table 3-9 reports direct emissions generated from sources within the Bay Area and estimates future GHG emissions.

TABLE 3-9

**Bay Area Greenhouse Gas Emission Inventory Projections**  
(million metric tons CO<sub>2</sub>-Equivalent)

<b>SOURCE CATEGORY</b>	<b>Year</b>	<b>2005</b>	<b>2009</b>	<b>2012</b>	<b>2015</b>	<b>2020</b>
<b>INDUSTRIAL/COMMERCIAL</b>						
<i>Oil Refineries</i>						
Refining Processes		3.4	3.5	3.6	3.7	3.9
Refinery Make Gas Combustion		4.7	4.9	5.0	5.2	5.4
Natural Gas and Other Gases Combustion		4.8	5.0	5.1	5.3	5.5
Liquid Fuel Combustion		0.1	0.1	0.1	0.1	0.1
Solid Fuel Combustion		1.0	1.0	1.1	1.1	1.1
<i>Waste Management</i>						
Landfill Combustion Sources		0.0	0.0	0.0	0.0	0.0
Landfill Fugitive Sources		1.2	1.2	1.2	1.2	1.2
Composting/POTWs		0.4	0.4	0.4	0.4	0.4
<i>Other Industrial/ Commercial</i>						
Cement Plants		0.9	0.9	0.9	0.9	1.0
Commercial Cooking		0.1	0.1	0.1	0.1	0.2
ODS Substitutes/Nat. Gas Distrib./Other		3.6	5.2	6.3	7.5	9.4
Reciprocating Engines		0.6	0.6	0.6	0.7	0.7
Turbines		0.4	0.4	0.4	0.4	0.4
Natural Gas- Major Combustion Sources		1.6	2.5	2.6	2.7	2.8
Natural Gas- Minor Combustion Sources		8.8	9.2	9.5	9.9	10.4
Coke Coal		1.0	1.0	1.1	1.1	1.2
Other Fuels Combustion		0.3	0.4	0.4	0.4	0.4
Subtotal		32.8	36.3	38.4	40.6	44.2
<b>RESIDENTIAL FUEL USAGE</b>						
Natural Gas		6.4	6.6	6.8	6.9	7.2
LPgas/Liquid Fuel		0.2	0.2	0.2	0.2	0.2
Solid Fuel		0.1	0.2	0.2	0.2	0.2
Subtotal		6.7	6.9	7.1	7.2	7.5
<b>ELECTRICITY/ CO-GENERATION</b>						
Co-Generation		5.5	5.5	5.7	6.0	6.4
Electricity Generation		2.8	3.1	3.2	3.3	3.5
Electricity Imports		6.8	7.3	7.6	7.9	8.3
Subtotal		15.1	15.8	16.5	17.2	18.3
<b>OFF-ROAD EQUIPMENT</b>						
Lawn and Garden Equipment		0.1	0.1	0.1	0.1	0.1
Construction Equipment		1.7	1.9	1.9	2.0	2.2
Industrial Equipment		0.7	0.8	0.8	0.9	1.0
Light Commercial Equipment		0.2	0.2	0.3	0.3	0.3
Subtotal		2.8	3.0	3.2	3.3	3.6
<b>TRANSPORTATION</b>						
<i>Off-Road</i>						
Locomotives		0.1	0.1	0.1	0.1	0.1
Ships		0.7	0.8	0.8	0.9	1.0
Boats		0.6	0.6	0.5	0.5	0.6

**TABLE 3-9 (concluded)**

<b>SOURCE CATEGORY</b>	<b>Year</b>	<b>2005</b>	<b>2009</b>	<b>2012</b>	<b>2015</b>	<b>2020</b>
Commercial Aircraft		1.8	2.0	2.1	2.3	2.6
General Aviation		0.2	0.2	0.2	0.3	0.3
Military Aircraft		0.5	0.5	0.5	0.5	0.5
<i>On-Road</i>						
Passenger Cars/Trucks up to 10,000 lbs		26.6	27.1	27.9	29.0	30.9
Medium/Heavy Duty Trucks > 10,000 lbs		3.3	3.3	3.4	3.5	3.7
Urban, School and Other Buses		0.8	0.8	0.8	0.8	0.9
Motor-Homes and Motorcycles		0.2	0.2	0.2	0.2	0.2
Subtotal		34.8	35.6	36.7	38.1	40.7
<b>AGRICULTURE/FARMING</b>						
Agricultural Equipment		0.2	0.2	0.2	0.2	0.2
Animal Waste		0.6	0.6	0.6	0.6	0.6
Soil Management		0.3	0.3	0.3	0.3	0.3
Biomass Burning		0.0	0.0	0.0	0.0	0.0
Subtotal		1.1	1.1	1.1	1.1	1.1
<b>GRAND TOTAL EMISSIONS</b>		<b>93.4</b>	<b>98.7</b>	<b>103.0</b>	<b>107.5</b>	<b>115.4</b>

Source: BAAQMD, 2009

### Regulatory Background

In response to growing scientific and political concern regarding global climate change, California has recently adopted a series of laws over the last decade to reduce both the level of GHGs in the atmosphere and to reduce emissions of GHGs from commercial and private activities within the state.

In September 2006, Governor Schwarzenegger signed California's Global Warming Solutions Act of 2006 (AB32). AB32 required CARB to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions, by January 1, 2008;
- Adopt mandatory reporting rules for significant sources of GHG emissions by January 1, 2008;
- Adopt an emissions reduction plan by January 1, 2009, indicating how emissions reductions will be achieved via regulations, market mechanisms, and other actions; and,
- Adopt regulations to achieve the maximum technologically feasible and cost-effect reductions of GHGs by January 1, 2011

In October 2011, CARB approved the cap-and-trade regulation, marking a significant milestone toward reducing California's greenhouse gas emissions under its AB 32 law. The regulation sets a statewide limit on the emissions from sources responsible for 80 percent of

California's greenhouse gas emissions. The regulation covers 360 businesses representing 600 facilities and is divided into two broad phases: an initial phase beginning in 2012 that will include all major industrial sources along with utilities; and, a second phase that began in 2015 and brings in distributors of transportation fuels, natural gas and other fuels.

Companies are not given a specific limit on their greenhouse gas emissions but must supply a sufficient number of allowances (each covering the equivalent of one ton of carbon dioxide) to cover their annual emissions. Each year, the total number of allowances issued in the state drops, requiring companies to find the most cost-effective and efficient approaches to reducing their emissions. By the end of the program in 2020 there will be a 15 percent reduction in greenhouse gas emissions compared to today, reaching the same level of emissions as the state experienced in 1990, as required under AB 32.

There has also been activity at the federal level on the regulation of GHGs. On October 30, 2009, the U.S. EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires reporting of GHG emissions from large sources and suppliers (facilities that emit 25,000 metric tons of GHGs per year or more) in the United States, and is intended to collect accurate and timely emissions data to inform policy decision.

## **Discussion of Impacts**

**VII a and b.** 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<sub>2</sub>). CO<sub>2</sub> is not a pollutant that occurs in relatively low concentrations as a by-product of the combustion process; CO<sub>2</sub> 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 GHG 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<sub>2</sub>, 100 years, for example, the effects of GHGs are longer-term, affecting the global climate over a relatively long time frame. GHGs do not have human health effects like criteria pollutants. Rather, it is the increased accumulation of GHGs 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 GHG emissions associated with a single project. Furthermore, the GHG emissions associated with the proposed rule amendments would be small relative to total global or even state-wide GHG emissions. Thus, the significance of potential impacts from GHG emissions related to the proposed amendments to Rule 6-3 has been analyzed for long-term operations on a cumulative basis, as discussed below.



Cumulative GHG impacts in the Bay Area are generally evaluated in terms of the air quality management plan that controls overall air emissions within the District. Therefore, the cumulative GHG impacts include the proposed amendment to Rule 6-3 along with implementing the control measures in the 2010 Clean Air Plan, the most recent air quality plan approved in the District.

The proposed amendment to Rule 6-3 would generally reduce the combustion of wood and increase the combustion of natural gas, and potentially increase the combustion of propane. In general, strategies that conserve energy and promote clean technologies usually also reduce greenhouse gas emissions. As shown in Table 3-9, the fuel combustion and the generation of electricity are responsible for a large portion of greenhouse gases produced in the Bay Area.

The amendments to Rule 6-3 are not expected to result in an increase in GHG emissions. As shown in Table 3-10, the GHG emissions associated with the combustion of natural gas or propane are less than the GHG emissions associated with the combustion of wood for the same heating value. Therefore, conversion from wood burning devices to natural gas or propane for heating would reduce GHG emissions.

**TABLE 3-10**

**GHG Emissions for Fuel Combustion**

<b>Fuel</b>	<b>Default CO2 Emission Factor (kg CO2/mmBtu)<sup>(1)</sup></b>	<b>Kilograms of GHG Emissions per 10,000,000 Btu (metric tons)</b>
Natural Gas	53.02	530.2 (0.53)
Propane	61.46	614.6 (0.61)
Wood	93.80	938.0 (0.94)

(1) Source: Federal Register, Vol. 74, No. 209, pages 56409-56410, Table C-1 to Subpart C of Part 98, Default CO2 Emission Factors and High Heat Values for Various Fuel Types.

The proposed amendments, along with the 2010 CAP as a whole, are expected to promote a net decrease in GHG emissions. The 2010 CAP control measure strategy promotes fuel efficiency and pollution prevention, which also reduces GHG emissions. Measures that reduce fuel use and/or increase use of alternative fuels will also be beneficial. In general, strategies that conserve energy and promote clean technologies usually also reduce GHG emissions. As shown in Table 3-9, the fuel combustion and the generation of electricity are responsible for a large portion of greenhouse gases produced in the Bay Area.

**Conclusion**

Based on the above discussion, implementation of the proposed amendments to Rule 6-3 are expected to result in a decrease in GHG emissions. Therefore, no significant adverse GHG impacts are expected due to implementation the proposed amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VIII. HAZARDS AND HAZARDOUS MATERIALS.</b> Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions 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 6-3 would apply to all areas within the BAAQMD's jurisdiction.

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 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.

## 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 consist of three main elements: a hazard assessment that includes off-site consequences analyses and a five-year accident history, a prevention program, and an emergency response program.

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, operating procedures, among others.

## **Discussion of Impacts**

**VII a - b.** Since wood, pellet-fuel, and wood ash are not considered hazardous materials, use of compliant wood-burning devices would not require the routine transport, use, or disposal of hazardous materials. The restriction of U.S. EPA-compliant wood-burning devices in existing residential applications and commercial operations, or prohibition of non-compliant wood-burning devices during Mandatory Burn Bans, would not create a significant hazard to the public or environment through a reasonable foreseeable upset and accident conditions involving hazardous materials. The use of electrical heaters as an alternative to wood-burning devices would not result in potentially significant adverse impacts because the use of hazardous materials would not be required.

While natural gas devices substituted for wood-burning devices would introduce greater explosive risk, the majority of residences and facilities in the District already have natural gas service. Natural gas is flammable, can be explosive under certain conditions, and a release of natural gas may result in potentially significant hazards and risk of upset to people. The majority

of facilities that would be affected by the proposed rule amendments already have natural gas pipeline infrastructure for natural gas delivery. Natural gas burning devices must meet American National Standards Institute (ANSI) standards. Compliance with applicable federal, state and local regulatory requirements for the design and installation of natural gas devices would make the risk of accidental release less than significant. Further, the amendments to Rule 6-3 include an exemption from Rule 6-3 for U.S. EPA-certified wood-burning devices in areas where natural gas service is not available; therefore, Rule 6-3 will not require the installation of new natural gas utility lines or increase the hazards related to the use of natural gas.

**VII c.** The proposed rule amendments would not generate hazardous emissions, handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. The use of compliant wood-burning devices in existing residential applications and during Mandatory Burn Bans would generate less TACs emissions than non-compliant wood-burning devices. Replacement of wood-burning devices with natural gas or electric heating devices would reduce TAC emissions associated with heating activities.

Replacement of wood-burning devices with natural gas devices would increase risk of explosion. However, since natural gas devices would require building permits, compliance with federal, state, and local regulatory requirements for the design and installation of natural gas devices would limit the risk of accidental release to the degree that the risk would be expected to be less than significant at school sites.

**VII d.** The proposed rule amendments would eliminate the installation of wood-burning devices at new residences and commercial operations. Government Code §65962.5 is related to hazardous material sites at industrial facilities. The proposed rule amendments would affect residences and commercial facilities such as hotels, restaurants, lodges, etc., which are typically not associated with hazardous waste sites. Therefore, commercial facilities and residences would not normally be included on the list of hazardous material sites compiled pursuant to Government Code §65962.5. As a result, the amendments to Rule 6-3 are not expected to affect any facilities included on a list of hazardous material sites and, therefore, would not create a significant hazard to the public or environment.

**VII e – f.** The proposed rule amendments would not result in a safety hazard for residents or workers within two miles of a public airport, a public use airport, or a private air strip. The use of compliant wood-burning or alternative heating devices is not expected to require construction activities outside of existing developed areas. Therefore, the proposed rule amendments would not impact any airport land use plan or result in a safety hazard in the vicinity of public or private air strips. Replacement of wood-burning devices with electric or natural gas devices would reduce TAC emissions from wood burning. Replacement of wood-burning devices with natural gas devices would increase risk of explosion. However, since natural gas devices would require building permits, compliance with federal, state, and local regulatory requirements for the design and installation of natural gas devices would limit the risk of accidental release to the degree that the risk would be expected to be less than significant regarding public airports or private air strip.

**VII g.** No impacts on emergency response plans are anticipated from the proposed amendments to Rule 6-3. Wood-burning devices or their alternatives are not typically major components of

any evacuation or emergency response plan. The proposed rule amendments neither require nor are likely to result in activities that would impact the emergency response plan. No major construction activities are expected as a result of the proposed rule amendments. Therefore, no significant adverse impact on emergency response plans is expected.

**VII h.** No increase in hazards related to wildfires is anticipated from the proposed amendments to Rule 6-3 which would apply to existing structures utilizing compliant wood-burning devices. The proposed rule amendments will not create new residential or commercial land use projects. Any new development that might occur would occur for reasons other than the proposed rule amendments. New land use projects would require a CEQA analysis that would evaluate wildfire risks. Mitigation measures would be required to reduce impacts to the maximum extent possible if the analysis determined such risks to be significant. The proposed amendments to Rule 6-3 are not expected to reduce the amount of brush cleared in wildfire hazard areas as the brush clearing is generally required for compliance with fire codes. The burning of brush in wood-burning devices is not expected to be a common practice so no significant impacts are expected.

### **Conclusion**

Based upon these considerations, no significant adverse hazards and hazardous materials impacts are expected from the implementation of the proposed amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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**IX. HYDROLOGY AND WATER QUALITY.**

Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

flooding as a result of the failure of a levee or dam?

- j) Inundation by seiche, tsunami, or mudflow?

## Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and affected environment vary substantially throughout the area and include commercial, industrial, residential, agricultural, and open space uses.

The wood-burning devices affected by the proposed rule amendments are located in residences and commercial facilities throughout the Bay Area. 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 affected areas are located within the San Francisco Bay Area Hydrologic Basin. The primary regional groundwater water-bearing formations include the recent and Pleistocene (up to two million years old) alluvial deposits and the Pleistocene Huichica formation. Salinity within the unconfined alluvium appears to increase with depth to at least 300 feet. Water of the Huichica formation tends to be soft and relatively high in bicarbonate, although usable for domestic and irrigation needs.

## Regulatory Background

The Federal Clean Water Act of 1972 primarily establishes regulations for pollutant discharges into surface waters in order to protect and maintain the quality and integrity of the nation's waters. This Act requires industries that discharge wastewater to municipal sewer systems to meet pretreatment standards. The regulations authorize the U.S. EPA to set the pretreatment standards. The regulations also allow the local treatment plants to set more stringent wastewater discharge requirements, if necessary, to meet local conditions.

The 1987 amendments to the Clean Water Act enabled the U.S. EPA to regulate, under the National Pollutant Discharge Elimination System (NPDES) program, discharges from industries and large municipal sewer systems. The U.S. EPA set initial permit application requirements in 1990. The State of California, through the State Water Resources Control Board, has authority to issue NPDES permits, which meet U.S. EPA requirements, to specified industries.

The Porter-Cologne Water Quality Act is California's primary water quality control law. It implements the state's responsibilities under the Federal Clean Water Act but also establishes state wastewater discharge requirements. The 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 1998 California list as impaired water bodies due to the presence of chlordane, copper, DDT, diazinon, dieldrin, dioxin and furan compounds, mercury, nickel, PCBs, and selenium.

## Discussion of Impacts

**VIII a-j.** The proposed amendments to Rule 6-3 would limit the installation of new, and replacement of existing wood-burning devices in the District to U.S. EPA compliant wood-burning devices. Compliant wood-burning devices do not use water for any reason, nor do they generate wastewater. Any construction activities regarding replacement of non-compliant wood-burning devices would be minor and would not require heavy equipment, so there would be no soil disturbance attributed to the proposed rule amendments.

No impacts on hydrology/water quality resources are anticipated from the proposed amendments to Rule 6-3. Because U.S. EPA-compliant wood-burning devices do not use water for any reason, the proposed rule amendments would not require construction of additional water resource facilities, create the need for new or expanded water entitlements, or necessitate alteration of drainage patterns. The residences and commercial facilities affected by the proposed rule amendments are required to comply with wastewater discharge regulations. The requirement to utilize compliant wood-burning devices will have no impact on wastewater discharges, alter drainage patterns, create additional water runoff, place any additional structures within 100-year flood zones or other areas subject to flooding, or contribute to inundation by seiche, tsunami or mudflow. No major construction activities are expected from the proposed amendments to Rule 6-3 and no new structures are required. Therefore, no significant adverse impacts on hydrology/water quality are expected.

## Conclusion

Based upon these considerations, no significant adverse hydrology and water quality impacts are expected from the implementation of the proposed amendments to Rule 6-3.



	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. LAND USE AND PLANNING.</b> Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to a general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 residences and commercial facilities affected by the proposed rule amendments are located throughout the Bay Area.

**Regulatory Background**

Land uses are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

**Discussion of Impacts**

**IX a-c.** The proposed amendments to Rule 6-3 would not create any new development, but would restrict installation of wood-burning devices to compliant devices in new development and prohibit burning of non-compliant devices during a Mandatory Burn Ban. Thus, the proposed amendments to Rule 6-3 do not include any components that would mandate physically dividing an established community or generate additional development.

The proposed amendments to Rule 6-3 have no components which would affect land use plans, policies, or regulations. Regulating PM emissions from wood-burning devices will not require local governments to alter land use and other planning considerations due to the proposed amendments. Habitat conservation or natural community conservation plans, agricultural

resources or operations, would not be affected by the amendments to Rule 6-3, and divisions of existing communities would not occur. Therefore, current or planned land uses within the District will not be significantly affected as a result of the proposed amendments to Rule 6-3.

### **Conclusion**

Based upon these considerations, no significant adverse impacts to land use and planning are expected from the adoption of the amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. MINERAL RESOURCES.</b> Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Setting**

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The residences and commercial facilities affected by the proposed rule amendments are located throughout the Bay Area.

**Regulatory Background**

Mineral resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

**Discussion of Impacts**

**X a-b.** The proposed rule amendments 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 amendments to Rule 6-3 would further reduce PM emissions from wood-burning devices by further limiting exemptions; adopting the more stringent U.S. EPA standards; strengthening the visible emissions limitation; requiring real estate and rental disclosures to communicated PM2.5 health hazards; and transition new building construction and rental properties to cleaner heating options. The proposed amendments to Rule 6-3 are not expected to create new development. Therefore, no significant impact to mineral resources is anticipated as a result of the amendments to Rule 6-3.

**Conclusion**

Based upon these considerations, no significant adverse impacts to mineral resources are expected from the adoption of the amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. NOISE.</b> Would the project:				
a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Expose persons to or generate of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Setting**

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The residences and commercial facilities affected by the proposed rule amendments are located throughout the Bay Area.

**Regulatory Background**

Noise issues 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.

### **Discussion of Impacts**

**XI a.** The proposed amendments to Rule 6-3 would restrict installation of wood-burning devices in new development and prohibit use of non-compliant wood burning devices during Mandatory Burn Bans. Since no heavy-duty equipment is required to install compliant devices, noise impacts associated with the proposed rule amendments are expected to be minimal. Operation of compliant wood-burning devices may require the addition of blowers or exhaust fans. Blowers and exhaust fans would be regulated by local building permits and are similar in some respects to those used in household water heaters. Noise from these systems, both indoors and outdoors, is expected to be limited to acceptable levels by the building permit process. Therefore, residences and commercial operations affected by the proposed amendments to Rule 6-3 are not expected to have a significant adverse effect on local noise control laws or ordinances.

**XI b.** The proposed amendments to Rule 6-3 are not expected to generate or expose people to excessive groundborne vibration or groundborne noise. Equipment used to install wood-burning devices in new or existing residences or commercial operations are not in any way expected to generate vibrations.

**XI c.** The proposed amendments to Rule 6-3 are not expected to result in a substantial permanent increase in ambient noise levels in the District. The proposed amendments would not create new development. Compliant equipment and non-compliant equipment operate at similar noise levels, and are designed to be operated in residences and commercial facilities (e.g., hotels, restaurants, etc.), where operators are protected by noise regulations, and residences will not tolerate excessive noise levels. Permanent increases in noise levels are not anticipated as a result of the proposed amendments to Rule 6-3.

**XI d.** The proposed amendments to Rule 6-3 are not expected to increase periodic or temporary ambient noise levels to levels existing prior to the proposed amendments. The installation or replacement of wood-burning devices in new facilities would require minor construction activities and would not require the use of heavy equipment. Operational noise levels are expected to be equivalent to existing noise levels as discussed earlier.

**XI e-f.** Adoption of the proposed amendments to Rule 6-3 would not require construction in existing facilities, and does not require the use of heavy equipment for installation in new or existing residences or commercial operations. No new noise impacts are expected from any existing facilities during construction or operation regardless of their proximity to a public/private airport. Thus, people residing or working in the vicinities of public/private airports are not expected to be exposed to excessive noise levels due to the proposed amendments.

### **Conclusion**



Based upon these considerations, no significant adverse impacts to noise are expected from the adoption of the amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIII. POPULATION AND HOUSING.</b> 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Setting**

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The residences and commercial facilities affected by the proposed rule amendments are located throughout the Bay Area.

**Regulatory Background**

Population and housing growth and resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

**Discussion of Impacts**

**XII. a-c.** The proposed amendments to Rule 6-3 are not expected to result in the construction of new facilities or the displacement of housing or people. Implementation of the proposed amendments will require that new development install compliant wood-burning devices and restricts wood-burning devices during Mandatory Burn Bans. These amendments and restrictions would not induce growth or displace housing or people in any way. The proposed amendments are not expected to result in significant adverse effects on population or housing.

**Conclusion**

Based upon these considerations, no significant adverse impacts to population and housing are expected from the adoption of the amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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**XIII. PUBLIC SERVICES.** Would the project:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Setting**

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The residences and commercial facilities affected by the proposed rule amendments are located throughout the Bay Area.

Given the large area covered by the BAAQMD, public services are provided by a wide variety of local agencies. Fire protection and police protection/law enforcement services within the BAAQMD are provided by various districts, organizations, and agencies. There are several school districts, private schools, and park departments within the BAAQMD. Public facilities within the BAAQMD are managed by different county, city, and special-use districts.

**Regulatory Background**

City and/or County General Plans usually contain goals and policies to assure adequate public services are maintained within the local jurisdiction.

**Discussion of Impacts**

**XIII a.** The wood-burning devices affected by the proposed amendments to Rule 6-3 are not expected to require any new or additional public services. As shown in Section VII – Hazards and Hazardous Material, the use of compliant wood-burning devices is not expected to generate significant explosion or fire hazard impacts so no increase in fire protection services is expected.

The amendments to Rule 6-3 are not expected to have any adverse effects on local police departments and require additional police services as it would only require the installation of compliant wood-burning devices in remodels or new development. The proposed amendments would not result in new development and new development projects would be built regardless of whether or not Rule 6-3 is amended. Therefore, no significant adverse fire and police protection impacts from the proposed amendments are expected.

As discussed in Section XII, Population and Housing, adoption of the amendments to Rule 6-3 would not induce population growth. The proposed amendments to Rule 6-3 would further reduce PM emissions from wood-burning devices by further limiting exemptions; adopting the more stringent U.S. EPA standards; strengthening the visible emissions limitation; requiring real estate and rental disclosures to communicate PM<sub>2.5</sub> health hazards; and transition new building construction and rental properties to cleaner heating options. Therefore, with no increase in local population anticipated, additional demand for new or expanded schools or parks is not anticipated. As a result, no significant adverse impacts are expected to local schools or parks.

Besides building permits, there is no other need for government services. The proposal would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. There will be no increase in population as a result of the adoption of the amendments to Rule 6-3, 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 amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XV. RECREATION.</b> Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Setting**

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that there are numerous areas for recreational activities. The residences and commercial facilities affected by the proposed rule amendments are located throughout the Bay Area. Public recreational land can be located adjacent to, or in reasonable proximity to these areas.

**Regulatory Background**

Recreational areas are generally protected and regulated by the City and/or County General Plans at the local level through land use and zoning requirements. Some parks and recreation areas are designated and protected by state and federal regulations.

**Discussion of Impacts**

**XIV a-b.** The proposed amendments to Rule 6-3 have no provisions affecting land use plans, policies, or regulations. The proposed amendments 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 amendments to Rule 6-3 is not expected to have any significant adverse impacts on recreation.

**Conclusion**

Based upon these considerations, no significant adverse impacts to recreation are expected from the adoption of the amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. TRANSPORTATION/TRAFFIC.</b> Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards because of a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, and portions of western Solano and southern Sonoma Counties. Because the area of coverage is so vast (approximately 5,600 square miles), land uses vary greatly and include commercial, industrial, residential, and agricultural uses. Rule 6-3 would apply to all areas within the BAAQMD's jurisdiction.

Transportation infrastructure within the BAAQMD ranges from single-lane roadways to multilane interstate highways. Transportation systems between major hubs are located within and outside the BAAQMD, including railroads, airports, waterways, and highways. Localized modes of travel include personal vehicles, busses, bicycles, and walking.

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.



## Discussion of Impacts

**XV a, b, f.** The proposed amendments to Rule 6-3 are not expected to create additional traffic or significant increases in staffing at existing residential or commercial facilities that would conflict with applicable plans, ordinances or policies affecting the performance of the circulation system. The proposed amendments to Rule 6-3 would further reduce PM emissions from wood-burning devices by further limiting exemptions; adopting the more stringent U.S. EPA standards; strengthening the visible emissions limitation; requiring real estate and rental disclosures to communicate PM<sub>2.5</sub> health hazards; and transition new building construction and rental properties to cleaner heating options. The proposed 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. No conflicts with any congestion management programs, to include level of service and travel demand measures, or other standards established by county congestion management agencies for designated roads or highways are expected. No changes are expected to parking capacity at or in the vicinity of affected residences or commercial facilities as the proposed amendments to Rule 6-3 only pertain to wood-burning devices. Therefore, no significant adverse impacts resulting in changes to traffic patterns or levels of service at local intersections are expected.

**XV c.** The proposed amendments to Rule 6-3 include minor modifications to existing residences and commercial facilities as well as restrictions on the type of wood-burning devices to be installed in new development. The proposed amendments are not expected to involve the delivery of materials via air so no increase in air traffic is expected.

**XV d - e.** The proposed amendments to Rule 6-3 are not expected to increase traffic hazards or create incompatible uses. No effect on emergency access to affected residences or commercial facilities is expected from adopting the proposed amendments. Utilizing compliant wood-burning devices versus non-compliant devices is not expected to have a significant adverse impact on traffic hazards, create incompatible uses or emergency access.

**XV f.** The proposed amendments to Rule 6-3 affect wood-burning devices and are not expected to conflict with adopted policies, plans, or programs supporting alternative transportation modes (e.g., bus turnouts, bicycle racks).

## Conclusion

Based upon these considerations, no significant adverse impacts to transportation and traffic are expected from the adoption of the amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>XVII. UTILITIES/SERVICE SYSTEMS.</b> Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Setting**

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area.

Given the large area covered by the BAAQMD, public utilities are provided by a wide variety of local agencies. The affected residences and commercial facilities are supported by wastewater and storm water treatment facilities and treated wastewater is discharged under the requirements of NPDES permits.

Water is supplied to affected residents and commercial 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.

Hazardous waste generated at area residences and commercial facilities, which is not reused on-site, or recycled off-site, is disposed of at a licensed in-state hazardous waste disposal facilities. Two such facilities are the Chemical Waste Management Inc. (CWMI) Kettleman Hills facility in King's County, and the Safety-Kleen facility in Buttonwillow (Kern County). Hazardous waste can also be transported to permitted facilities outside of California. The nearest out-of-state landfills are U.S. Ecology, Inc., located in Beatty, Nevada; USPCI, Inc., in Murray, Utah; and Envirosafe Services of Idaho, Inc., in Mountain Home, Idaho. Incineration is provided at the following out-of-state facilities: Aptus, located in Aragonite, Utah and Coffeyville, Kansas; Rollins Environmental Services, Inc., located in Deer Park, Texas and Baton Rouge, Louisiana; Chemical Waste Management, Inc., in Port Arthur, Texas; and Waste Research & Reclamation Co., Eau Claire, Wisconsin.

### **Regulatory Background**

City and/or County General Plans usually contain goals and policies to assure adequate utilities and service systems are maintained within the local jurisdiction.

### **Discussion of Impacts**

**XVI a- e.** The proposed amendments to Rule 6-3 would further reduce PM emissions from wood-burning devices by further limiting exemptions; adopting the more stringent U.S. EPA standards; strengthening the visible emissions limitation; requiring real estate and rental disclosures to communicate PM2.5 health hazards; and transition new building construction and rental properties to cleaner heating options. These regulations regarding wood-burning devices will not generate or affect wastewater, stormwater or stormwater drainage, and will not require water or affect water supplies. No increases in demand for public utilities are expected as a result of the proposed amendments.

**XVI f-g.** The amendments to Rule 6-3 would require the installation of compliant wood-burning devices and generally would not generate additional waste. The amendments to Rule 6-3 could encourage the replacement of existing devices with newer compliant devices. As existing devices are replaced, their disposal is expected to be categorized as solid waste. Solid waste is either recycled or disposed of in landfills. The proposed amendments are not expected to generate any increase in solid waste. Since any residences or commercial facilities would replace their non-compliant wood burning devices because of a remodel, not because of proposed amendments. Compliant wood-burning devices installed during remodels and non-wood burning devices installed in new development are not expected to generate any more solid waste than non-Rule 6-3 compliant devices. In fact, natural gas burning or electric heating

devices would not generate solid waste (e.g., wood ash). Therefore, no significant adverse impacts are expected to solid waste as a result of the proposed amendments.

### **Conclusion**

Based upon these considerations, no significant adverse impacts to utilities/service systems are expected from the adoption of the amendments to Rule 6-3.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.</b>				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**18. MANDATORY FINDINGS OF SIGNIFICANCE**

**Discussion of Impacts**

**XVII a.** The proposed amendments to Rule 6-3 do not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory, as discussed in the previous sections of the CEQA checklist. The proposed rule amendments are expected to result in PM emission reductions from wood-burning devices, thus providing a beneficial air quality impact and improvement in air quality. As discussed in Section IV, Biological Resources and Section V, Cultural Resources, no significant adverse impacts are expected to biological or cultural resources.

**XVII b-c.** The proposed amendments to Rule 6-3 are expected to result in emission reductions of PM from affected wood-burning devices, thus providing a beneficial air quality impact

through reductions in PM. The proposed rule amendments are part of a long-term plan to bring the Bay Area into compliance with the state ambient air quality standards, thus reducing the potential health impacts. The proposed rule amendments do not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in conjunction with other regulatory control projects. The proposed amendments to Rule 6-3 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 Cited

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